



**NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)**

(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)



**1.2.2 Number of Add on /Certificate programs offered during the last five years**

**Academic Year : 2016-17**

**No. of Programmes: 9**

SI No	Department	Page No
1	<a href="#">Automobile Engineering</a>	2
2	<a href="#">Computer Science and Engineering</a>	42
3	<a href="#">Electrical and Electronics Engineering</a>	123
4	<a href="#">Mechanical Engineering</a>	196
5	<a href="#">Mechatronics Engineering</a>	237
6	<a href="#">MBA</a>	296
7	<a href="#">Electronics and Communication Engineering</a>	327
8	<a href="#">Master of Computer Applications</a>	355



**NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)**

(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)



# **Automobile Engineering**

NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(Accredited by NAAC)  
PAMPADY, THIRUVILWAMALA, THRISSUR (DT) – 680588

NCERC/3128/F/AC/09/16

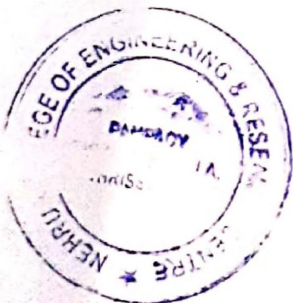
12.07.2016

**CIRCULAR**

It is informed that all the departments are directed to conduct the certificate courses and value added courses for the odd and even semesters of the Academic year 2016-17. The schedule for the above courses with details should be submitted to the office on or before 3<sup>rd</sup> August 2016.

  
**Principal**

Copy to: All HoDs, for information and necessary action.  
Circulate among Staffs  
NCERC, Library.



  
**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thrissur, Kerala  
Pin - 680588

# NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE

PAMPADY, THIRUVILWAMALA – 680 588

(ACCREDITED BY NAAC)

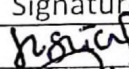
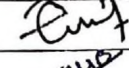
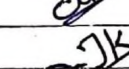
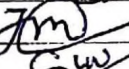
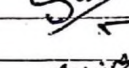
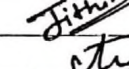
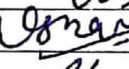
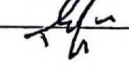


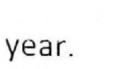
## DEPARTMENT OF AUTOMOBILE ENGINEERING

Minutes of Meeting of Department Advisory Committee – 2016-17 – Odd Semester

Date & Time:

Meeting Facilitator: Head of the Department

In Attendance:

S. No	Name	Signature
1	Senthil Kumar, Assistant Professor	
2	Vinal M N, Associate Professor	
3	Subrahmannian AS, Assistant Professor	
4	Jayakrishnan S, Assistant Professor	
5	Sreejith C, Assistant Professor	
6	Seena PS, Assistant Professor	
7	Jinoy Mathew, Assistant Professor	
8	Jithin, Assistant Professor	
9	Deepak KP, Assistant Professor	
10	Shaik Usman Sha, Assistant Professor	
11	Rejumon R, Assistant Professor	

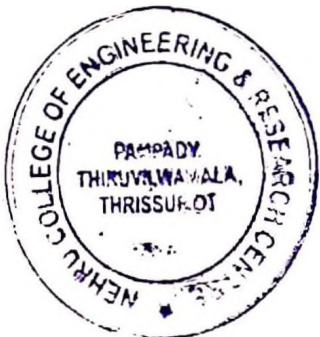
Absent: None

Meeting Agenda:

1. To discuss the certificate courses for the 2016-2017 academic year.
2. To identify the topics of the certificate courses for offering to students.
3. To select an interested faculty and allot the course.

Minutes of Meeting:

1. The meeting starts with a silent prayer.
2. HOD welcomed the entire teaching faculty for the meeting.
3. HOD asked for the willingness of the faculty to conduct the certificate course
4. Mr Sreejith C has shown his willingness to take a certificate course on "Automobile Prototyping" in the academic year.



PRINCIPAL

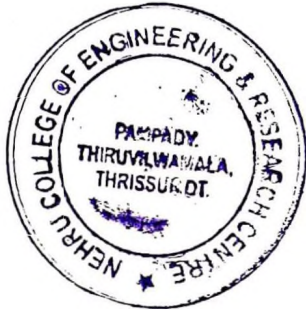
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala, Thrissur Dt  
Pin 680 597 Kerala

5. HOD asked Mr Sreejith C to prepare the syllabus for the Automobile Prototyping certificate course and submit for approval.
6. HOD asked the department coordinator to make notice and publish it on the department notice board.
7. The meeting was concluded by 4 pm.

Prepared by,



(VIMAL M N)



**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Panipady Thiruvilwamala, Thrissur Dt  
Pin 680 597 Kerala

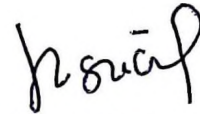
**NEHRU COLLEGE OF ENGINEERING RESEARCH CENTRE**  
**PAMPADY, THIRUVILWAMALA – 680 588**  
**DEPARTMENT OF AUTOMOBILE ENGINEERING**  
**CERTIFICATE COURSE – 2016-2017 – ODD SEMESTER**

**AUTOMOBILE PROTOTYPING**  
**SYLLABUS**

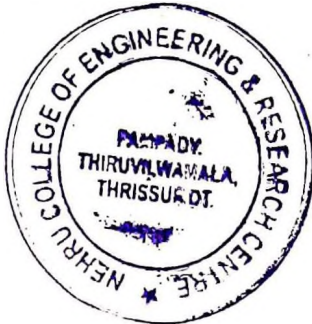
CLASS	PARTICULARS
1, 2	History of Automobile
3, 4	Introduction to basic parts of a vehicle
5, 6	Learn about the vehicle chassis
6, 7	Types of chassis frame
8, 9	Rules for making a vehicle chassis
10, 11	Introduction of Transmission Powertrain System
12, 13	The suspension system of a vehicle
14, 15	The steering mechanism of a vehicle
16, 17	Design chassis for prototype model
18, 19	Fabrication of all component with handmade chassis
20, 21	Suspension system arrangements in chassis
22, 23	Steering system arrangements in chassis
24, 25	Transmission gear system setup
26, 27, 28	Bind the control system with prototype model
29, 30	Testing the prototype car



Program Coordinator



Head of the Department



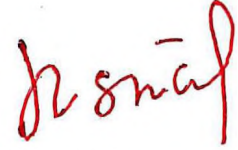
**PRINCIPAL**

Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala, Thrissur Dt  
Pin 680 597 Kerala

NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
PAMPADY, THIRUVILWAMALA - 680 588  
DEPARTMENT OF AUTOMOBILE ENGINEERING

NOTICE

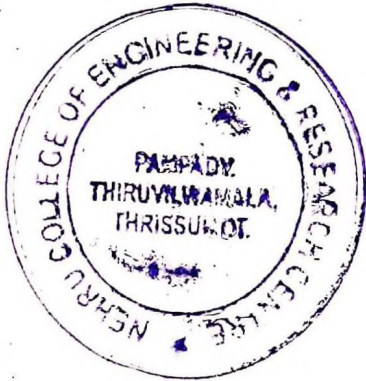
As per the advice from the DAC meeting, it was decided to conduct the certificate course on "Automotive Prototyping" which will be conducted by having 30 hours of contact classes from 4 pm to 5 pm in the odd semester of 2016-2017 academic year. Those who are interested to participate, enroll your name to your class advisor.



Head of the Department

To:

I, III, V, VII Semester Classroom - AUE  
Principal  
Academic Office  
Notice Board - AUE



PRINCIPAL


Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thrissur Dt  
Pin - 680 587 Kerala

**NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE**  
PAMPADY, THIRUVILWAMALA - 680 588  
**DEPARTMENT OF AUTOMOBILE ENGINEERING**  
**ENROLLEMENT LIST OF CERTIFICATE COURSE - 2016-17 - ODD SEMESTER**

Course Name : Automobile Prototyping

Sl No	Register Number	Student Name	Semester	Year
1	NCANEAU001	Aakash P Mohan	VII	IV
2	NCANEAU002	Aaqil Roshan Shaik	VII	IV
3	NCANEAU004	Akhil M	VII	IV
4	NCANEAU005	Akshay A S	VII	IV
5	NCANEAU006	Akshay K	VII	IV
6	NCANEAU007	Amal Dev	VII	IV
7	NCANEAU008	Amal P	VII	IV
8	NCANEAU009	Ananthakrishnan C	VII	IV
9	NCANEAU010	Anson Ps	VII	IV
10	NCANEAU011	Anugrah P	VII	IV
11	NCANEAU012	Anushob O V	VII	IV
12	NCANEAU014	Aravind A	VII	IV
13	NCANEAU016	Arju P K	VII	IV
14	NCANEAU017	Ashiq .p.h	VII	IV
15	NCANEAU018	Ashish C G	VII	IV
16	NCANEAU019	Aswin Achuthan Palat	VII	IV
17	NCANEAU020	Azlan Ali	VII	IV
18	NCANEAU021	Carl Joy	VII	IV
19	NCANEAU022	Deepak K S	VII	IV
20	NCANEAU024	Gokul Raj	VII	IV
21	NCANEAU025	Greejith M.g	VII	IV
22	NCANEAU027	Harikrishna Yadav A.v	VII	IV
23	NCANEAU030	Jishnu A.h	VII	IV
24	NCANEAU031	Libin Andrews	VII	IV
25	NCANEAU032	Midhun Mohan	VII	IV



  
**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Thiruvilwamala, Thrissur Dt  
680 588 Kerala




26	NCANEAU033	Mohammed Rusin Kafoor	VII	IV
27	NCANEAU037	Rahul M R	VII	IV
28	NCANEAU038	Rammohan C	VII	IV
29	NCANEAU039	Ranjith Kr	VII	IV
30	NCANEAU040	Raveen Krishna K	VII	IV
31	NCANEAU041	Rinoy Johnson	VII	IV
32	NCANEAU042	Sachin	VII	IV
33	NCANEAU043	Saha! Ali Ahmed	VII	IV
34	NCANEAU044	Sanad Thurakkal Puthan Purayil	VII	IV
35	NCANEAU045	Sanal Krishnan M	VII	IV
36	NCANEAU047	Sandeep K	VII	IV
37	NCANEAU048	Sandeep.m	VII	IV
38	NCANEAU049	Sanil A A	VII	IV
39	NCANEAU050	Santhanu Ajith	VII	IV
40	NCANEAU051	Sarath Chandran K.t	VII	IV
41	NCANEAU053	Sudin Sp	VII	IV
42	NCANEAU054	Syam P.s	VII	IV
43	NCANEAU055	Uday Harinarayanan	VII	IV
44	NCANEAU057	K A Vidyasagar	VII	IV
45	NCANEAU058	Vishnu Mohan	VII	IV
46	NCANEAU059	Kowshik V	VII	IV
47	NCANEAU060	Mahesh Venu	VII	IV
48	NCANEAU061	Muhammed Jinas P	VII	IV
49	NCANEAU062	Fayis Musthafa K.t	VII	IV
50	NCANEAU063	Abhiram R	VII	IV
51	NCANEAU064	MEBIN SUNNY	VII	IV
52	NCANEAU065	Jeffy Simon Mathew	VII	IV
53	NCANEAU066	Marshal A S	VII	IV
54	NCAOEAO001	Abdul Kasim V.k	V	III
55	NCAOEAO002	Abhijith K.p	V	III
56	NCAOEAO003	Abhijith V.u	V	III

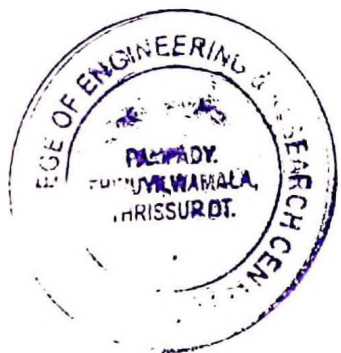
  
**PRINCIPAL**  
 Nehru College of  
 Engineering and Research Centre  
 Panpady Thiruvilwamala Thrikkuruthi  
 Pin 680 597 Kerala

57	NCAOEAU004	Abhilash Rajeev	V	III
58	NCAOEAU005	Ajay C	V	III
59	NCAOEAU007	Akhil S	V	III
60	NCAOEAU008	Akshay R	V	III
61	NCAOEAU009	Anas N K	V	III
62	NCAOEAU010	Arjun M.m	V	III
63	NCAOEAU011	ARJUN P	V	III
64	NCAOEAU012	Ashwin Krishnakumar	V	III
65	NCAOEAU013	Aslam Kh	V	III
66	NCAOEAU014	Aswath A	V	III
67	NCAOEAU015	Basil Abraham	V	III
68	NCAOEAU016	Gokul Udai	V	III
69	NCAOEAU017	Gokul Vm	V	III
70	NCAOEAU018	Harikrishnan	V	III
71	NCAOEAU019	Harikrishnan Udhayan	V	III
72	NCAOEAU020	JASIL USMAN V.T.K	V	III
73	NCAOEAU021	Jayakrishnan P	V	III
74	NCAOEAU022	Jeremy Shaji	V	III
75	NCAOEAU023	Jinu Jose	V	III
76	NCAOEAU024	Lovin Jolly	V	III
77	NCAOEAU025	Midhun Khosh Ms	V	III
78	NCAOEAU026	Muhammed Salim K	V	III
79	NCAOEAU027	Mundakkal Anmol Ashokan	V	III
80	NCAOEAU028	Prajeesh P	V	III
81	NCAOEAU029	Rijo P Jose	V	III
82	NCAOEAU030	Rohan P.s	V	III
83	NCAOEAU031	Royance T Simon	V	III
84	NCAOEAU032	Safwan Mohammed	V	III
85	NCAOEAU033	Salgin A.s	V	III
86	NCAOEAU034	Saurabh S	V	III
87	NCAOEAU035	Shafnas K	V	III



  
**PRINCIPAL**  
 Nehru College of  
 Engineering and Research Centre  
 Pamphady Thiruvananthapuram, Thiruvananthapuram  
 Pin - 690 597 Kerala

88	NCAOEAU036	Shanoob M	V	III
89	NCAOEAU038	Sreehari K	V	III
90	NCAOEAU039	Suresh C U	V	III
91	NCAOEAU040	Swaroop Das	V	III
92	NCAOEAU041	Tomjo Chittilappilly	V	III
93	NCAOEAU042	Vishnu Pradeep Kumar	V	III
94	NCAOEAU043	Vineeth R	V	III
95	NCAOEAU044	Vipin George	V	III
96	NCAOEAU045	Jithin N V	V	III
97	NCAOEAU046	Midhun Mathew Prasad	V	III
98	NCAOEAU047	Prabin C B	V	III
99	NCAOEAU048	Varun C.v	V	III
100	NCAOEAU049	Ajith Bhaskar	V	III
101	NCAOEAU050	Gokul Gopan G	V	III
102	NCAOEAU051	Hasin Ali T	V	III
103	NCAOEAU052	Sharon. E B	V	III
104	NCAOEAU053	Ragil Raju	V	III
105	NCE15AU001	Adhinrag K I	III	II
106	NCE15AU002	Akhilraj A	III	II
107	NCE15AU003	Akshay K K	III	II
108	NCE15AU004	Akshay Mohan	III	II
109	NCE15AU005	Alister Reeve Xavier	III	II
110	NCE15AU007	Anil V	III	II
111	NCE15AU008	Antony Simon Glen Rozario	III	II
112	NCE15AU009	V M Aravind	III	II
113	NCE15AU011	Athul. R. Nair	III	II
114	NCE15AU012	Deepak K J	III	II
115	NCE15AU016	Jubin Scaria	III	II
116	NCE15AU017	Leon Varghese A	III	II
117	NCE15AU018	Mohamed Fairouz P	III	II
118	NCE15AU020	Navaneeth Rackandi Sathiavel	III	II



  
**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala, Thrissur Dt  
Pin 680 597 Kerala

119	NCE15AU023	Pranav.p.m	III	II
120	NCE15AU024	Rahul K	III	II
121	NCE15AU025	Sagar P S	III	II
122	NCE15AU026	Sharan Dev.k	III	II
123	NCE15AU027	Shyamjith A	III	II
124	NCE15AU028	Sreejesh K S	III	II
125	NCE15AU030	Sreejith S	III	II
126	NCE15AU031	Suresh Kumar V P	III	II
127	NCE15AU033	Vaisakh Raj	III	II
128	LNCE15AU035	Arjun K.v	III	II
129	LNCE15AU036	Praveen K J	III	II
130	NCE16AU002	Adithya Sekhar	I	I
131	NCE16AU003	Akhil Pradeep	I	I
132	NCE16AU004	Akhil Shaji	I	I
133	NCE16AU005	Akshay Bhasker Chakkalakkal	I	I
134	NCE16AU008	Arun Anand A	I	I
135	NCE16AU010	Gopikrishnan S	I	I

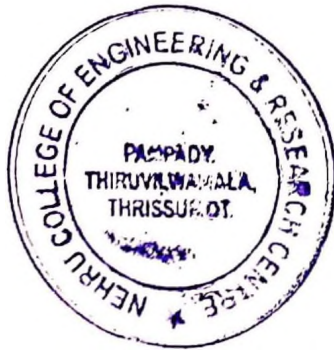
*[Handwritten Signature]*

Head of the Department

*[Handwritten Signature]*

PRINCIPAL

Nehru College of  
Engineering and Research Centre  
Panipady Thiruvilwamala, Thrissur Dt  
Pin - 680 507 Kerala

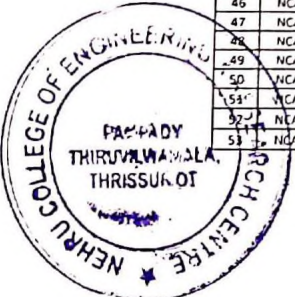


**NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE**  
 PAMPADY, THIRUVILWAMALA - 680 588  
**DEPARTMENT OF AUTOMOBILE ENGINEERING**  
**ATTENDANCE REGISTER OF CERTIFICATE COURSE - 2016-17 - ODD SEMESTER**  
 Course Name : Automobile Prototyping

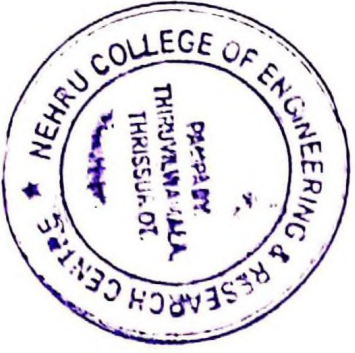
Sl No	Register Number	Student Name	Hours																														
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
1	NCANEAU001	Aakash P Mohan	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
2	NCANEAU002	Aaql Rishan Shaik	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
3	NCANEAU004	Abhil M	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
4	NCANEAU005	Akshay A S	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
5	NCANEAU006	Akshay K	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
6	NCANEAU007	Amal Div	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
7	NCANEAU008	Amal P	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
8	NCANEAU009	Ananthakrishnan C	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
9	NCANEAU010	Anwin P	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
10	NCANEAU011	Anuprah P	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
11	NCANEAU012	Anushob D V	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
12	NCANEAU014	Aaravnd A	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
13	NCANEAU016	Arju P K	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
14	NCANEAU017	Ashut p h	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
15	NCANEAU018	Ashut C G	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
16	NCANEAU019	Aswin Achuthan Palat	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
17	NCANEAU020	Azlan Ali	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
18	NCANEAU021	Carl Joy	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
19	NCANEAU022	Deepak K S	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
20	NCANEAU024	Gokul Raj	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
21	NCANEAU025	Greesh M g	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
22	NCANEAU027	Harikrishna Yadav A v	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
23	NCANEAU030	Jishnu A h	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
24	NCANEAU031	Libin Andrews	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
25	NCANEAU032	Midhun Mohan	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
26	NCANEAU033	Mohammed Rusin Kaloor	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
27	NCANEAU037	Rahul M R	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
28	NCANEAU038	Rammohan C	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
29	NCANEAU039	Ranjith Kr	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
30	NCANEAU040	Ravren Krishna K	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
31	NCANEAU041	Rinoy Johnson	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
32	NCANEAU042	Sachin	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
33	NCANEAU043	Sahal Ali Ahmed	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
34	NCANEAU044	Sanad Thurakkal Puthan Purayil	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
35	NCANEAU045	Sanal Krishnan M	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
36	NCANEAU047	Sandeep K	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
37	NCANEAU048	Sandeep m	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
38	NCANEAU049	Sanil A A	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
39	NCANEAU050	Santhanu Ajith	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
40	NCANEAU051	Sarath Chandran K.t	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
41	NCANEAU053	Sudin Sp	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
42	NCANEAU054	Syam P s	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
43	NCANEAU055	Uday Harinarayanan	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
44	NCANEAU057	K A Vidyasagar	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
45	NCANEAU058	Vishnu Mohan	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
46	NCANEAU059	Rowshik V	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
47	NCANEAU060	Mahesh Venu	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
48	NCANEAU061	Muhammed Jinas P	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
49	NCANEAU062	Fayis Musthafa K.t	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
50	NCANEAU063	Abhiram R	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
51	NCANEAU064	MEBIN SUNNY	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
52	NCANEAU065	Jeffy Simon Mathew	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
53	NCANEAU066	Marshal A S	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/

*[Signature]*

**PRINCIPAL**  
 Nehru College of  
 Engineering and Research Centre  
 Pampady, Thiruvilwamala, Thiruvananthapuram Dt  
 Pin 680 597 Kerala








115	NCE15AU016	Adithy Sathian	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/					
116	NCE15AU017	Leon Varipuvur A	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
117	NCE15AU018	Mohamed Farooq P	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
118	NCE15AU020	Navaneeth Rukmani Sathiyavel	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
119	NCE15AU023	Pranav P m	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/		
120	NCE15AU024	Rahul K	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/		
121	NCE15AU025	Sagar P S	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
122	NCE15AU026	Sharan Dev K	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
123	NCE15AU027	Shyamjith A	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
124	NCE15AU028	Sreejith K S	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
125	NCE15AU030	Sreejith S	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
126	NCE15AU031	Supreth kumar V P	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
127	NCE15AU033	Varadth Raj	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
128	LNC15AU035	Arjun K V	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
129	LNC15AU036	Pravenn K I	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
130	NCE15AU002	Adithyan Sathian	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
131	NCE15AU003	Alhil Pradeep	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
132	NCE16AU004	Ashii Shaji	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
133	NCE16AU005	Abhinav Bhavane Chakkalakkal	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
134	NCE16AU008	Arjun Anand A	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
135	NCE16AU010	Gopikrishnan S	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	

Faculty  


Head of the Department  


  
**PRINCIPAL**  
 Nehru College of  
 Engineering and Research Centre  
 Dharmadham Thiruvananthapuram Thrissur Dt  
 Dist: 852 001 Kerala

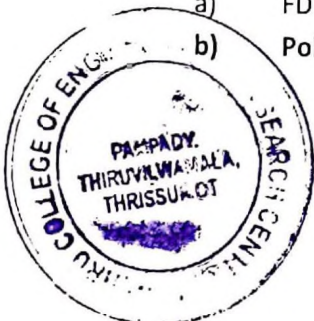
DEPARTMENT OF AUTOMOBILE ENGINEERING  
CERTIFICATE COURSE – 2016-2017 – ODD SEMESTER – EXAM


AUTOMOBILE PROTOTYPING  
ANSWER KEY

Answer all the Questions

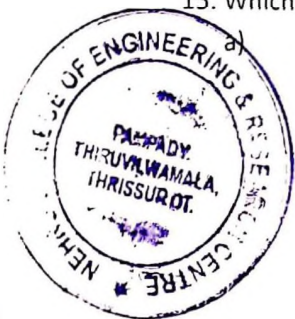
Max Marks: 50 Marks

1. Which one is NOT related to rapid prototyping definition?
  - a) layer by layer
  - b) physical model
  - c) from 3D CAD data
  - d) **production line**
2. Which one of the process is NOT using laser?
  - a) LOM
  - b) SLA
  - c) SLS
  - d) **FDM**
3. How many processes in the design process?
  - a) 3
  - b) 4
  - c) **5**
  - d) 6
4. Which of the following are the processes in RP cycle?
  - a) Post-processing
  - b) Transfer to machine
  - c) Pre-processing
  - d) **All of the answers**
5. Which of the process is available in colours?
  - a) SLA
  - b) FDM
  - c) MJM
  - d) **3D Printer**
6. What is the full name of SLS?
  - a) Selective Laser Simulator
  - b) Sintering Laser Simulator
  - c) **Selective Laser Sintering**
  - d) Stereolithography Laser Sintering
7. What are the other names of Multi Jet Modeling?
  - a) FDM
  - b) **Poly Jet**



  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala Thrikkuruthi  
Pin 680 597 Kerala

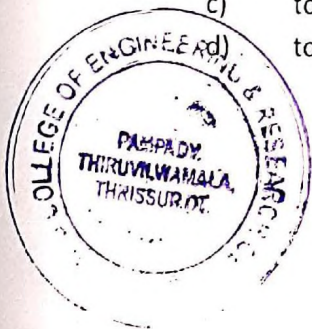
- c) 3D Printer
  - d) Extrusion
8. Which one is the design process?
- a) Build
  - b) **Concept**
  - c) Pre-processing
  - d) Transfer to machine
9. What is the format for prototyping machine file?
- a) .prt
  - b) .slt
  - c) **.stl**
  - d) .iges
10. Which CAD software cannot be used to create data for prototyping machine?
- a) CREO
  - b) CATIA
  - c) NX UniGraphics
  - d) **Adobe Illustrator**
11. Which one of the process is subtractive prototyping?
- a) **5 axis CNC Milling**
  - b) Fused Deposition Modeling
  - c) Multi Jet Modeling
  - d) Stereolithography Apparatus
12. Which of the process, the input material are in solid form?
- a) SLA
  - b) SLS
  - c) **FDM**
  - d) MJM
13. Which of the process, the input material are in liquid form?
- a) LOM
  - b) SLS
  - c) FDM
  - d) **MJM**
14. Which of the process, the input material are in powder form?
- a) LOM
  - b) SLS
  - c) FDM
  - d) MJM
15. Which material is NOT available for LOM process?
- a) Paper



A handwritten signature in black ink, appearing to be "GJ".

**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala, Thrissur, Dt  
Pin 680 597 Kerala

- b) Plastic
  - c) Metal
  - d) Glass
16. Which of the process is using extrusion concept?
- a) SLA
  - b) SLS
  - c) FDM
  - d) MJM
17. Which model of 3D printer available in PERDA-TECH?
- a) Z310
  - b) Z450
  - c) Z510
  - d) Z650
18. Which of the following is NOT the colour binder of 3D Printer?
- a) Cyan
  - b) Black
  - c) Magenta
  - d) Yellow
19. Which of the following is the process of pre-processing stage?
- a) Remove support
  - b) Checking 3D CAD data
  - c) De-powdering loose material
  - d) Dip in binder to strengthen the part
20. What is the infiltrant used to strengthen parts in Z510 machine?
- a) Water
  - b) Paint
  - c) Epson Salt
  - d) Color Bond
21. What is Rapid Prototyping?
- a) The process by which a model of the final product can quickly be made
  - b) Changing the design of something after production has already begun
  - c) When companies or teams are working on multiple aspects of the same design at one time
  - d) Designing something while competing against other departments
22. What is the major importance of a prototype?
- a) to impress investors
  - b) to show how the item works
  - c) to get a patent
  - d) to place as a decoration



*[Signature]*  
 PRINCIPAL  
 Nehru College of  
 Engineering and Research Centre  
 Pampady, Thiruvilwamala, Thrissur, Kerala  
 Pin - 686 569

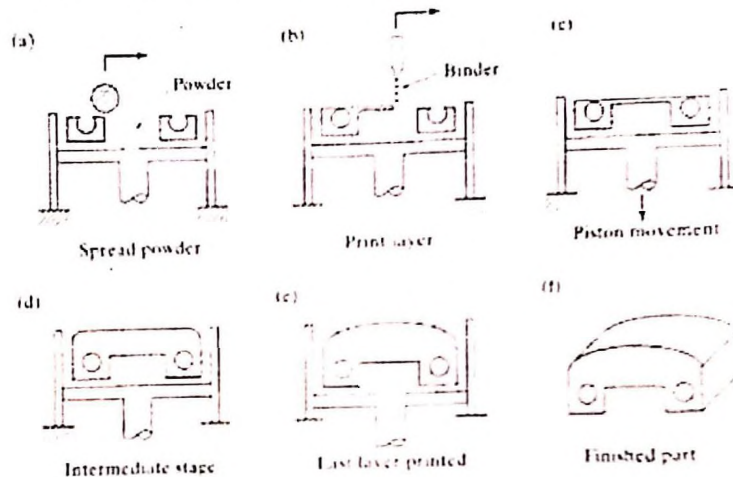
23. The Following are the types of Rapid Prototyping processes, EXCEPT...

- a) Additive
- b) Subtractive
- c) Virtual
- d) Layering

24. The starting material of the Stereolithography method is....

- a) Solid
- b) Liquid
- c) Powder
- d) Gas

25. What is the name of the process in the Figure?



- a) Stereolithography
- b) Selective Laser Sintering
- c) 3D Printer
- d) laminated object manufacturing

## NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE

PAMPADY, THIRUVILWAMLA – 680 588

DEPARTMENT OF AUTOMOBILE ENGINEERING

CERTIFICATE COURSE – 2017-2018 – ODD SEMESTER – EXAM



**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala Thiruvananthapuram  
Pin 680 597 Kerala

Student Name: ABHITH N A  
Register Number: NCAMEAU001

12/50

21/25

## NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE

PAMPADY, THIRUVILWAMLA – 680 588

DEPARTMENT OF AUTOMOBILE ENGINEERING

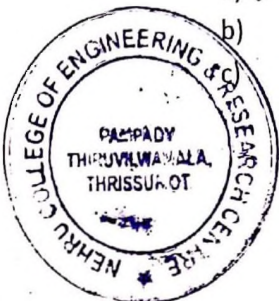
CERTIFICATE COURSE – 2016-2017 – ODD SEMESTER – EXAM

### AUTOMOBILE PROTOTYPING

Answer all the Questions and each question carry 2 marks

Max Marks: 50 Marks

- Which one is NOT related to rapid prototyping definition?
  - layer by layer
  - physical model
  - from 3D CAD data
  - production line
- Which one of the process is NOT using laser?
  - LOM
  - SLA
  - SLS
  - FDM
- How many processes in the design process?
  - 3
  - 4
  - 5
  - 6
- Which of the following are the processes in RP cycle?
  - Post-processing
  - Transfer to machine
  - Pre-processing
  - All of the answers
- Which of the process is available in colours?
  - SLA
  - FDM
  - MJM
  - 3D Printer
- What is the full name of SLS?
  - Selective Laser Simulator
  - Sintering Laser Simulator
  - Selective Laser Sintering



*[Signature]*

PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thrissur  
Pin 680 597 Kerala

Student Name:

Register Number:

- d) Stereolithography Laser Sintering
7. What are the other names of Multi Jet Modeling?
- a)  FDM
- b) Poly Jet
- c) 3D Printer
- d) Extrusion
8. Which one is the design process?
- a)  Build
- b)  Concept
- c) Pre-processing
- d) Transfer to machine
9. What is the format for prototyping machine file?
- a) .prt
- b)  .slt
- c)  .stl
- d) .iges
10. Which CAD software cannot be used to create data for prototyping machine?
- a) CREO
- b) CATIA
- c)  NX UniGraphics
- d)  Adobe Illustrator
11. Which one of the process is subtractive prototyping?
- a)  5 axis CNC Milling
- b) Fused Deposition Modeling
- c) Multi Jet Modeling
- d) Stereolithography Apparatus
12. Which of the process, the input material are in solid form?
- a)  SLA
- b) SLS
- c) FDM
- d) MJM
13. Which of the process, the input material are in liquid form?
- a)  LOM
- b)  SLS
- c) FDM
- d) MJM
14. Which of the process, the input material are in powder form?



*Cd*  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala, Thiruvananthapuram Dt  
Pin: 680 597 Kerala

Student Name:

Register Number:

- a)  LOM
- b)  SLS
- c)  FDM
- d)  MJM

15. Which material is NOT available for LOM process?

- a)  Paper
- b)  Plastic
- c)  Metal
- d)  Glass

16. Which of the process is using extrusion concept?

- a)  SLA
- b)  SLS
- c)  FDM
- d)  MJM

17. Which model of 3D printer available in PERDA-TECH?

- a)  Z310
- b)  Z450
- c)  Z510
- d)  Z650

18. Which of the following is NOT the colour binder of 3D Printer?

- a)  Cyan
- b)  Black
- c)  Magenta
- d)  Yellow

19. Which of the following is the process of pre-processing stage?

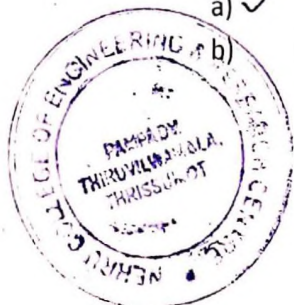
- a)  Remove support
- b)  Checking 3D CAD data
- c)  De-powdering loose material
- d)  Dip in binder to strengthen the part

20. What is the infiltrant used to strengthen parts in Z510 machine?

- a)  Water
- b)  Paint
- c)  Epson Salt
- d)  Color Bond

21. What is Rapid Prototyping?

- a)  The process by which a model of the final product can quickly be made
- b)  Changing the design of something after production has already begun



  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala Thiruvananthapuram  
Pin 680 597 Kerala

Student Name:

Register Number:

- c) When companies or teams are working on multiple aspects of the same design at one time
- d) Designing something while competing against other departments

22. What is the major importance of a prototype?

- a)  to impress investors
- b)  to show how the item works
- c) to get a patent
- d) to place as a decoration

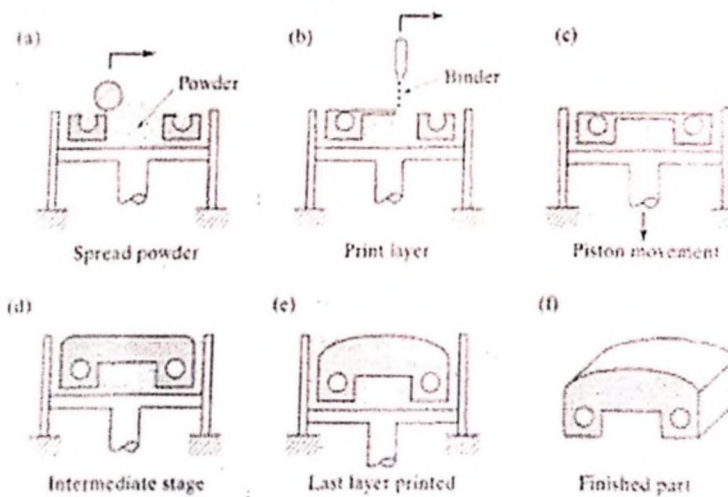
23. The Following are the types of Rapid Prototyping processes, EXCEPT...

- a) Additive
- b) Subtractive
- c)  Virtual
- d)  Layering

24. The starting material of the Stereolithography method is....

- a)  Solid
- b)  Liquid
- c) Powder
- d) Gas

25. What is the name of the process in the Figure?



- a) Stereolithography
- b)  Selective Laser Sintering
- c)  3D Printer
- d) laminated object manufacturing



*Ch*

PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Panipady Thiruvilwamala, Thiruvananthapuram  
Pin 680 597 Kerala

Student Name: KRISHNA DAS

Register Number: NCAMEAU021

22/5

21/25

## NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE

PAMPADY, THIRUVILWAMLA – 680 588

DEPARTMENT OF AUTOMOBILE ENGINEERING

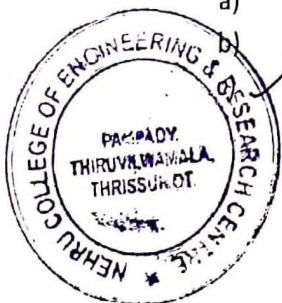
CERTIFICATE COURSE – 2016-2017 – ODD SEMESTER – EXAM

### AUTOMOBILE PROTOTYPING

Answer all the Questions and each question carry 2 marks

Max Marks: 50 Marks

- Which one is NOT related to rapid prototyping definition?
  - layer by layer
  - physical model
  - from 3D CAD data
  - production line
- Which one of the process is NOT using laser?
  - LOM
  - SLA
  - SLS
  - FDM
- How many processes in the design process?
  - 3
  - 4
  - 5
  - 6
- Which of the following are the processes in RP cycle?
  - Post-processing
  - Transfer to machine
  - Pre-processing
  - All of the answers
- Which of the process is available in colours?
  - SLA
  - FDM
  - MJM
  - 3D Printer
- What is the full name of SLS?
  - Selective Laser Simulator
  - Sintering Laser Simulator
  - Selective Laser Sintering



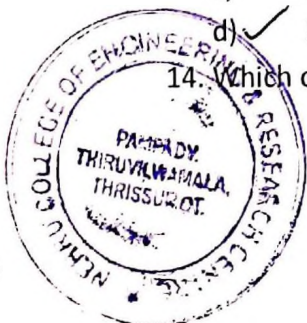
*[Signature]*

PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala Thrissur OT  
Pin 680 597 Kerala

Student Name:

Register Number:

- d) Stereolithography Laser Sintering
7. What are the other names of Multi Jet Modeling?
- a) FDM
- b) ✓ Poly Jet
- c) 3D Printer
- d) Extrusion
8. Which one is the design process?
- a) Build
- b) Concept
- c) ✓ Pre-processing
- d) Transfer to machine
9. What is the format for prototyping machine file?
- a) .prt
- b) .slt
- c) ✓ .stl
- d) .iges
10. Which CAD software cannot be used to create data for prototyping machine?
- a) CREO
- b) CATIA
- c) ✓ NX UniGraphics
- d) Adobe Illustrator
11. Which one of the process is subtractive prototyping?
- a) ✓ 5 axis CNC Milling
- b) Fused Deposition Modeling
- c) Multi Jet Modeling
- d) Stereolithography Apparatus
12. Which of the process, the input material are in solid form?
- a) SLA
- b) SLS
- c) ✓ FDM
- d) MJM
13. Which of the process, the input material are in liquid form?
- a) LOM
- b) SLS
- c) FDM
- d) ✓ MJM
14. Which of the process, the input material are in powder form?





**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala, Thrissur Dt  
Pin - 680 597 Kerala

Student Name:

Register Number:

- a) LOM
- b) SLS ✓
- c) FDM
- d) MJM

15. Which material is NOT available for LOM process?

- a) Paper
- b) Plastic
- c) Metal
- ✓ d) Glass

16. Which of the process is using extrusion concept?

- a) SLA
- b) SLS
- c) FDM
- ✓ d) MJM

17. Which model of 3D printer available in PERDA-TECH?

- a) Z310
- b) Z450
- ✓ c) Z510
- d) Z650

18. Which of the following is NOT the colour binder of 3D Printer?

- a) Cyan
- ✓ b) Black
- c) Magenta
- d) Yellow

19. Which of the following is the process of pre-processing stage?

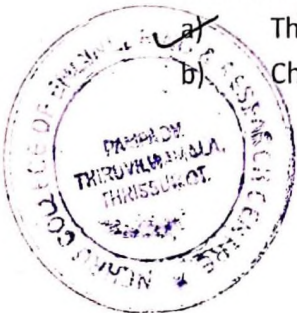
- a) Remove support
- ✓ b) Checking 3D CAD data
- c) De-powdering loose material
- d) Dip in binder to strengthen the part

20. What is the infiltrant used to strengthen parts in Z510 machine?

- a) Water
- b) Paint
- c) Epson Salt
- ✓ d) Color Bond

21. What is Rapid Prototyping?

- ✓ a) The process by which a model of the final product can quickly be made
- b) Changing the design of something after production has already begun



PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Panipady Thiruvilwamala, Thirissur Dt  
Pin 680 597 Kerala

Student Name:

Register Number:

- c) When companies or teams are working on multiple aspects of the same design at one time
- d) Designing something while competing against other departments
22. What is the major importance of a prototype?

- a) to impress investors
- b) to show how the item works
- c) to get a patent
- d) to place as a decoration

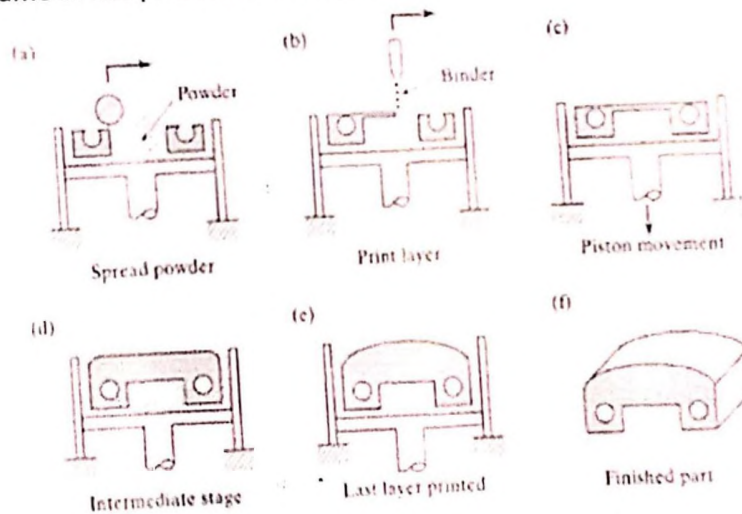
23. The Following are the types of Rapid Prototyping processes, EXCEPT...

- a) Additive
- b) Subtractive
- c) Virtual
- d) Layering

24. The starting material of the Stereolithography method is....


- a) Solid
- b) Liquid
- c) Powder
- d) Gas

25. What is the name of the process in the Figure?



- a) Stereolithography
- b) Selective Laser Sintering
- c) 3D Printer
- d) laminated object manufacturing



  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Panipady Thiruvilwamala Thirissuk. O.T.  
Pin 686 597 Kerala

# NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE

PAMPADY, THIRUVILWAMLA – 680 588

DEPARTMENT OF AUTOMOBILE ENGINEERING

CERTIFICATE COURSE – 2016-2017 – ODD SEMESTER – EXAM

GOKUL AJITH.  
NCAMEADU17

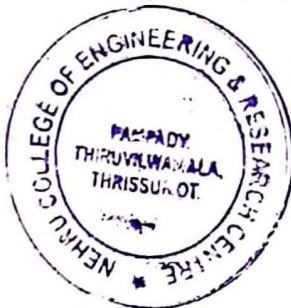
## AUTOMOBILE PROTOTYPING

Answer all the Questions and each question carry 2 marks

Max Marks: 50 Marks

1. Which one is NOT related to rapid prototyping definition?
  - a) layer by layer
  - b) physical model
  - c) from 3D CAD data
  - d) production line
2. Which one of the process is NOT using laser?
  - a) LOM
  - b) SLA
  - c) SLS
  - d) FDM
3. How many processes in the design process?
  - a) 3
  - b) 4
  - c) 5
  - d) 6
4. Which of the following are the processes in RP cycle?
  - a) Post-processing
  - b) Transfer to machine
  - c) Pre-processing
  - d) All of the answers
5. Which of the process is available in colours?
  - a) SLA
  - b) FDM
  - c) MJM
  - d) 3D Printer

Handwritten marks in red ink: a large circle containing '40/50' and another large circle containing '20/25'.



PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala, Thrissur Dt  
Pin 680 597 Kerala

- c) FDM
- d) MJM

13. Which of the process, the input material are in liquid form?

- a) LOM
- b) SLS




Handwritten signature in green ink above the text:  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala Thrissur Dt  
Pin 680 597 Kerala

Student Name:

Register Number:

6. What is the full name of SLS?
  - a) Selective Laser Simulator
  - b) Sintering Laser Simulator
  - c) Selective Laser Sintering
  - d) Stereolithography Laser Sintering
7. What are the other names of Multi Jet Modeling?
  - a) FDM
  - b) Poly Jet
  - c) 3D Printer
  - d) Extrusion
8. Which one is the design process?
  - a) Build
  - b) Concept
  - c) Pre-processing
  - d) Transfer to machine
9. What is the format for prototyping machine file?
  - a) .prt
  - b) .slt
  - c) .stl
  - d) .iges
10. Which CAD software cannot be used to create data for prototyping machine?
  - a) CREO
  - b) CATIA
  - c) NX UniGraphics
  - d) Adobe Illustrator
11. Which one of the process is subtractive prototyping?
  - a) 5 axis CNC Milling
  - b) Fused Deposition Modeling
  - c) Multi Jet Modeling
  - d) Stereolithography Apparatus
12. Which of the process, the input material are in solid form?
  - a) SLA
  - b) SLS
  - c) FDM
  - d) MJM
13. Which of the process, the input material are in liquid form?
  - a) LOM
  - b) SLS



  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala, Thrissur Dt  
Pin 680 597 Kerala

Student Name:

Register Number:

- c) FDM  
 d) MJM
14. Which of the process, the input material are in powder form?  
a) LOM  
 b) SLS  
c) FDM  
d) MJM
15. Which material is NOT available for LOM process?  
a) Paper  
b) Plastic  
 c) Metal  
d) Glass
16. Which of the process is using extrusion concept?  
a) SLA  
b) SLS  
 c) FDM  
d) MJM
17. Which model of 3D printer available in PERDA-TECH?  
a) Z310  
b) Z450  
 c) Z510  
d) Z650
18. Which of the following is NOT the colour binder of 3D Printer?  
a) Cyan  
 b) Black  
c) Magenta  
d) Yellow
19. Which of the following is the process of pre-processing stage?  
a) Remove support  
 b) Checking 3D CAD data  
c) De-powdering loose material  
d) Dip in binder to strengthen the part
20. What is the infiltrant used to strengthen parts in Z510 machine?  
a) Water  
b) Paint  
c) Epson Salt  
 d) Color Bond
21. What is Rapid Prototyping?



PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thrissur Dt.  
Pin - 686 597, Kerala

Student Name:

Register Number:

- a) The process by which a model of the final product can quickly be made
- b) Changing the design of something after production has already begun
- c) When companies or teams are working on multiple aspects of the same design at one time
- d) Designing something while competing against other departments

22. What is the major importance of a prototype?

- a) to impress investors
- b) to show how the item works
- c) to get a patent
- d) to place as a decoration

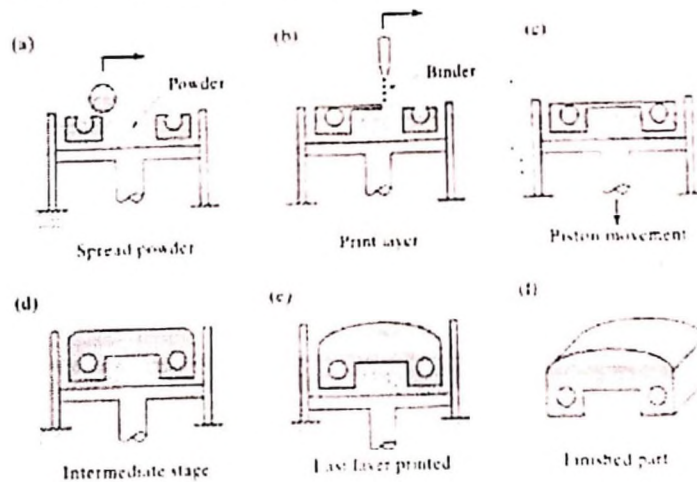
23. The Following are the types of Rapid Prototyping processes, EXCEPT...

- a) Additive
- b) Subtractive
- c) Virtual
- d) Layering

24. The starting material of the Stereolithography method is....

- a) Solid
- b) Liquid
- c) Powder
- d) Gas

25. What is the name of the process in the Figure?



- a) Stereolithography
- b) Selective Laser Sintering
- c) 3D Printer
- d) laminated object manufacturing



  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvikramamala, Thrissur Dt  
Pin - 680 597 Kerala

# NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE

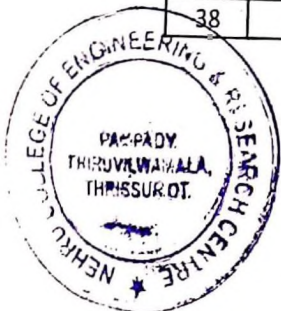
PAMPADY, THIRUVILWAMALA - 680 588

DEPARTMENT OF AUTOMOBILE ENGINEERING

MARK LIST OF CERTIFICATE COURSE - 2016-17 - ODD SEMESTER

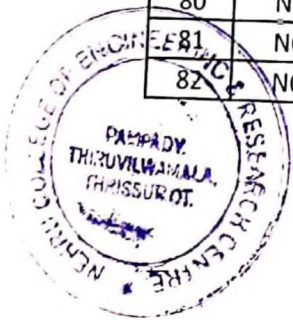
Course Name : Automobile Prototyping

Sl No	Register Number	Student Name	Semester	Year	Marks
1	NCANEAU001	Aakash P Mohan	VII	IV	46
2	NCANEAU002	Aaqil Roshan Shaik	VII	IV	34
3	NCANEAU004	Akhil M	VII	IV	36
4	NCANEAU005	Akshay A S	VII	IV	38
5	NCANEAU006	Akshay K	VII	IV	36
6	NCANEAU007	Amal Dev	VII	IV	34
7	NCANEAU008	Amal P	VII	IV	42
8	NCANEAU009	Ananthakrishnan C	VII	IV	38
9	NCANEAU010	Anson Ps	VII	IV	36
10	NCANEAU011	Anugrah P	VII	IV	34
11	NCANEAU012	Anushob O V	VII	IV	34
12	NCANEAU014	Aravind A	VII	IV	34
13	NCANEAU016	Arju P K	VII	IV	40
14	NCANEAU017	Ashiq .p.h	VII	IV	34
15	NCANEAU018	Ashish C G	VII	IV	36
16	NCANEAU019	Aswin Achuthan Palat	VII	IV	38
17	NCANEAU020	Azlan Ali	VII	IV	38
18	NCANEAU021	Carl Joy	VII	IV	44
19	NCANEAU022	Deepak K S	VII	IV	32
20	NCANEAU024	Gokul Raj	VII	IV	36
21	NCANEAU025	Greejith M.g	VII	IV	34
22	NCANEAU027	Harikrishna Yadav A.v	VII	IV	32
23	NCANEAU030	Jishnu A.h	VII	IV	36
24	NCANEAU031	Libin Andrews	VII	IV	32
25	NCANEAU032	Midhun Mohan	VII	IV	34
26	NCANEAU033	Mohammed Rusin Kafoor	VII	IV	38
27	NCANEAU037	Rahul M R	VII	IV	34
28	NCANEAU038	Rammohan C	VII	IV	46
29	NCANEAU039	Ranjith Kr	VII	IV	34
30	NCANEAU040	Raveen Krishna K	VII	IV	36
31	NCANEAU041	Rinoy Johnson	VII	IV	38
32	NCANEAU042	Sachin	VII	IV	36
33	NCANEAU043	Sahal Ali Ahmed	VII	IV	34
34	NCANEAU044	Sanad Thurakkal Puthan Purayil	VII	IV	42
35	NCANEAU045	Sanal Krishnan M	VII	IV	38
36	NCANEAU047	Sandeep K	VII	IV	36
37	NCANEAU048	Sandeep.m	VII	IV	34
38	NCANEAU049	Sanil A A	VII	IV	34



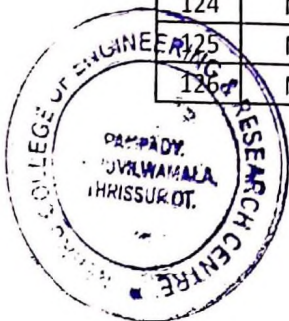
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thiruvananthapuram  
Pin - 680 597 Kerala

Sl No	Register Number	Student Name	Semester	Year	Marks
39	NCANEAU050	Santhanu Ajith	VII	IV	34
40	NCANEAU051	Sarath Chandran K.t	VII	IV	40
41	NCANEAU053	Sudin Sp	VII	IV	34
42	NCANEAU054	Syam P.s	VII	IV	36
43	NCANEAU055	Uday Harinarayanan	VII	IV	38
44	NCANEAU057	K A Vidyasagar	VII	IV	38
45	NCANEAU058	Vishnu Mohan	VII	IV	44
46	NCANEAU059	Kowshik V	VII	IV	32
47	NCANEAU060	Mahesh Venu	VII	IV	36
48	NCANEAU061	Muhammed Jinas P	VII	IV	34
49	NCANEAU062	Fayis Musthafa K.t	VII	IV	32
50	NCANEAU063	Abhiram R	VII	IV	36
51	NCANEAU064	MEBIN SUNNY	VII	IV	34
52	NCANEAU065	Jeffy Simon Mathew	VII	IV	36
53	NCANEAU066	Marshal A S	VII	IV	38
54	NCAOEAO001	Abdul Kasim V.k	V	III	38
55	NCAOEAO002	Abhijith K.p	V	III	44
56	NCAOEAO003	Abhijith V.u	V	III	42
57	NCAOEAO004	Abhilash Rajeev	V	III	38
58	NCAOEAO005	Ajay C	V	III	32
59	NCAOEAO007	Akhil S	V	III	36
60	NCAOEAO008	Akshay R	V	III	32
61	NCAOEAO009	Anas N K	V	III	34
62	NCAOEAO010	Arjun M.m	V	III	38
63	NCAOEAO011	ARJUN P	V	III	34
64	NCAOEAO012	Ashwin Krishnakumar	V	III	46
65	NCAOEAO013	Aslam Kh	V	III	34
66	NCAOEAO014	Aswath A	V	III	36
67	NCAOEAO015	Basil Abraham	V	III	38
68	NCAOEAO016	Gokul Udai	V	III	36
69	NCAOEAO017	Gokul Vm	V	III	34
70	NCAOEAO018	Harikrishnan	V	III	38
71	NCAOEAO019	Harikrishnan Udhayan	V	III	42
72	NCAOEAO020	JASIL USMAN V.T.K	V	III	42
73	NCAOEAO021	Jayakrishnan P	V	III	40
74	NCAOEAO022	Jeremy Shaji	V	III	34
75	NCAOEAO023	Jinu Jose	V	III	36
76	NCAOEAO024	Lovin Jolly	V	III	32
77	NCAOEAO025	Midhun Khosh Ms	V	III	30
78	NCAOEAO026	Muhammed Salim K	V	III	36
79	NCAOEAO027	Mundakkal Anmol Ashokan	V	III	32
80	NCAOEAO028	Prajeesh P	V	III	36
81	NCAOEAO029	Rijo P Jose	V	III	34
82	NCAOEAO030	Rohan P.s	V	III	32



PRINCIPAL  
Nehru Engineering Centre  
Engineering Research Centre  
Pampady, Thrissur Dt.  
Kerala

Sl No	Register Number	Student Name	Semester	Year	Marks
83	NCAOEAU031	Royance T Simon	V	III	34
84	NCAOEAU032	Safwan Mohammed	V	III	36
85	NCAOEAU033	Salgin A.s	V	III	32
86	NCAOEAU034	Saurabh S	V	III	32
87	NCAOEAU035	Shafnas K	V	III	36
88	NCAOEAU036	Shanoob M	V	III	38
89	NCAOEAU038	Sreehari K	V	III	36
90	NCAOEAU039	Suresh C U	V	III	34
91	NCAOEAU040	Swaroop Das	V	III	36
92	NCAOEAU041	Tomjo Chittilappilly	V	III	38
93	NCAOEAU042	Vishnu Pradeep Kumar	V	III	32
94	NCAOEAU043	Vineeth R	V	III	42
95	NCAOEAU044	Vipin George	V	III	44
96	NCAOEAU045	Jithin N V	V	III	42
97	NCAOEAU046	Midhun Mathew Prasad	V	III	42
98	NCAOEAU047	Prabin C B	V	III	34
99	NCAOEAU048	Varun C.v	V	III	42
100	NCAOEAU049	Ajith Bhaskar	V	III	38
101	NCAOEAU050	Gokul Gopan G	V	III	36
102	NCAOEAU051	Hasin Ali T	V	III	32
103	NCAOEAU052	Sharon. E B	V	III	34
104	NCAOEAU053	Ragil Raju	V	III	32
105	NCE15AU001	Adhinrag K I	III	II	34
106	NCE15AU002	Akhilraj A	III	II	36
107	NCE15AU003	Akshay K K	III	II	38
108	NCE15AU004	Akshay Mohan	III	II	32
109	NCE15AU005	Alister Reeve Xavier	III	II	34
110	NCE15AU007	Anil V	III	II	32
111	NCE15AU008	Antony Simon Glen Rozario	III	II	34
112	NCE15AU009	V M Aravind	III	II	34
113	NCE15AU011	Athul. R. Nair	III	II	36
114	NCE15AU012	Deepak K J	III	II	42
115	NCE15AU016	Jubin Scaria	III	II	36
116	NCE15AU017	Leon Varghese A	III	II	26
117	NCE15AU018	Mohamed Fairouz P	III	II	38
118	NCE15AU020	Navaneeth Rackandi Sathiavel	III	II	38
119	NCE15AU023	Pranav.p.m	III	II	22
120	NCE15AU024	Rahul K	III	II	24
121	NCE15AU025	Sagar P S	III	II	26
122	NCE15AU026	Sharan Dev.k	III	II	32
123	NCE15AU027	Shyamjith A	III	II	36
124	NCE15AU028	Sreejesh K S	III	II	28
	NCE15AU030	Sreejith S	III	II	30
	NCE15AU031	Suresh Kumar V P	III	II	32



PRINCIPAL  
Nathan College of  
Engineering and Research Centre  
Pampady Thiruvilwamala, Thiruvananthapuram  
Pin 880 597 Kerala

SI No	Register Number	Student Name	Semester	Year	Marks
127	NCE15AU033	Vaisakh Raj	III	II	34
128	LNCE15AU035	Arjun K.v	III	II	36
129	LNCE15AU036	Praveen K J	III	II	32
130	NCE16AU002	Adithya Sekhar	I	I	36
131	NCE16AU003	Akhil Pradeep	I	I	34
132	NCE16AU004	Akhil Shaji	I	I	32
133	NCE16AU005	Akshay Bhasker Chakkalakkal	I	I	32
134	NCE16AU008	Arun Anand A	I	I	36
135	NCE16AU010	Gopikrishnan S	I	I	34

*J. S. S. S.*  
Head of the Department



*ch*  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pan-pady Thiruvilwamala, Thirissur Dt  
Pin 680 597 Kerala

Date: 1 / 8 / 2016

From

Sreejith C,  
Course Coordinator,  
Department of Automobile Engineering,  
Nehru College of Engineering and Research Centre  
Pampady, Thiruvilwamala - 680 588.

To

The Principal,  
Nehru College of Engineering and Research Centre  
Pampady, Thiruvilwamala - 680 588.

Through: HOD, Department of Automobile Engineering

Respected Sir,

SUB: Request for conducting Certificate Course for the odd semester of 2016 - 2017 Academic Year - reg.

As per the circular number NCERC/3128/F/AC/09/16 on 12.07.2016, I may request your permission to conduct the certificate course for the odd semester of the 2016-2017 academic year. The syllabus and lecture plan is attached herewith for your perusal.

Details of Course certificate:

Academic Year	Semester	Topic	Time	No of Hours
2016 - 2017	ODD	Automobile Prototyping	4 pm - 5 pm	30

Kindly do the needful. Thank you.

Yours faithfully,



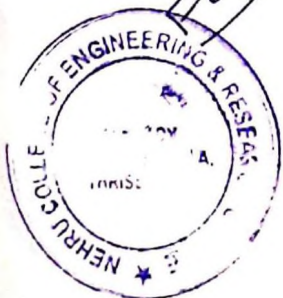
Sreejith C

Assistant Professor - AUE.

*Forwarded To Principal*

*Sreejith C*  
*1/8/16*

*Approved*

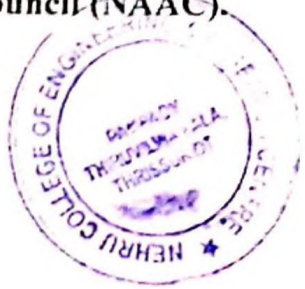


PRINCIPAL

Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thiruvilwamala  
Pin - 680 597 Kerala

# ABOUT US

Nehru College of Engineering and Research Centre (NCERC), situated on the Bank of the river Nila, is a premier Engineering college that has pioneered engineering education, research and training in the private sector. Established in 2002 by the founder chairman Shri P.K. Das, NCERC is committed to impart world class quality education in engineering and research. Dedicated to the service in the realm of technical education in Kerala, it is an ISO 9001:2015 certified institution, approved by All India Council for Technical Education (AICTE), affiliated to A P J Abdul Kalam Technological University (KTU) and is accredited by National Assessment and Accreditation Council (NAAC).



[www.ncerc.ac.in](http://www.ncerc.ac.in)



NEHRU COLLEGE OF ENGINEERING  
AND RESEARCH CENTRE, PAMPADY  
THRISSUR

PRESENTS

A COURSE ON

*Automobile Prototyping*

DURING 2016-2017 SEMESTER

Cordinator

Mr. Sreejith C

DEPARTMENT OF AUTOMOBILE  
ENGINEERING



PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala, Thrissur  
Pin - 680 507, Kerala

# ABOUT THE COURSE

Automobile engineering is a fascinating career path demanding hands-on skills in design and manufacturing along with the knowledge of latest advancements. In this course, you will develop these skills by building a scaled-down prototype of a car on your own.

By making this automobile prototype which can be controlled with a Radio Control, you will learn about the dynamics, control and overall design of real vehicles. You will make your model car with working copies of automobile systems like transmission, suspension, powertrain, steering, locomotion and the chassis. This will help you develop a deeper understanding of automobile

## Automobile Prototyping



## COURSE DETAILS

COURSE

COORDINATOR



Mr. Sreelath C

Assistant Professor,

Department of Automobile  
Engineering

CONTACT

Email: [sreelathc@ncerc.ac.in](mailto:sreelathc@ncerc.ac.in)

Phone: 7431339764

PRINCIPAL

Nellore

Engineering and Research Centre  
Perumalapuram

No. 68/59





NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
THRISSUR - 680 588

COURSE COMPLETION CERTIFICATE

Is presented to

Akhil Pradeep

For successfully completing the course on "*Automobile Prototyping*" organised by  
Department of Automobile Engineering, Nehru College of Engineering and Research  
Centre, Thrissur during odd semesters of 2016-2017 academic year.

Program Coordinator

HoD

PRINCIPAL

Nehru College of  
Engineering and Research Centre





NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
THRISSUR - 680 588

COURSE COMPLETION CERTIFICATE

Is presented to

Lovin Jolly

For successfully completing the course on "*Automobile Prototyping*" organised by  
Department of Automobile Engineering, Nehru College of Engineering and Research  
Centre, Thirissur during odd semesters of 2016-2017 academic year.

Program Coordinator

HoD

PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pattappi, Thiruvananthapuram  
Dist. Kannur





NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
THRISSUR - 680 588

COURSE COMPLETION CERTIFICATE

Is presented to

Sagar P S

For successfully completing the course on "*Automobile Prototyping*" organised by Department of Automobile Engineering, Nehru College of Engineering and Research Centre, Thrissur during odd semesters of 2016-2017 academic year.

Program Coordinator

HoD

PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampally, Thrissur, Kerala, India  
Ph: 680 588 588





NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE



# Computer Science and Engineering

# NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE


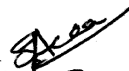
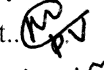


(ACCREDITED BY NAAC)

PAMPADY, THIRUVILWAMALA, THRISSUR DIST.

## MINUTES OF DEPARTMENT ADVISORY COMMITTEE MEETING HELD ON 11/07/2016

A meeting of the Department Advisory Committee (DAC) was held on 11<sup>th</sup> July 2016 at 1:00 PM in the chamber of HoD. CSE department.

The following members were present:

1. Prof. Dr. S Subasree HoD, CSE Dept. 
2. Ms. Shinu Acca Mani-Assistant Professor, CSE Dept. 
3. Ms. Marry Mareena P V-Assistant Professor, CSE Dept. 
4. Mr. Vipin K M-Assistant Professor, CSE Dept. 
5. Mr. Naveen Raja S M -Assistant Professor, CSE Dept. 

### Agenda

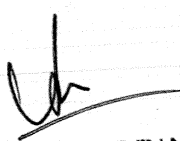
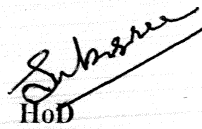
- Students result analysis
- Measures to be taken to improve performance of students in upcoming exams
- KTU syllabus discussion
- Discussion on improving teaching methods
- Conduction of certification course

The following decisions were taken:

1. Discussions was made on KTU syllabus handling and the improvements to be done in execution of the same
2. Measures to be taken to motivating and reducing the stress of the students by giving awareness to the students regarding the change in syllabus
3. It was decided to conduct a certificate course on "Artificial Intelligence" for giving awareness to the students about the emerging technology during the academic year 2016-17 from 22/08/2016 to 10/11/2016 for a period of 30 hours. And decided to ensure maximum participation of students
4. Also, it was decided to ensure compulsory attendance and staff advisors should monitor the same.

The meeting came to an end at 1:45 PM.



  
HoD   
**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thrissur Dt  
Pin 680 597 Kerala

From,

Ms.Preethi Mol

Assistant Professor,

CSE Department, NCERC, Pampady.

To,

The Principal,

NCERC, Pampady.

Through HOD

Respected Madam,

SUBJECT: Request for Conducting a Certificate Course, Reg.

Students need to have a deep understanding of the upcoming methodologies in machine learning, intelligent systems, Robotics, etc., to enhance knowledge dissemination for doing projects. So Computer Science and Engineering department would like to conduct a Certificate Course on "ARTIFICIAL INTELLIGENCE" from 22-08-2016. It will be a 30-hour course scheduled for August to November of this academic year 2016-2017. Kindly request you to give the permission for the same.

All UG/PG Engineering students of CSE Departments are Eligible for this course.

Thank you for your consideration. I look forward for your response soon.

Place: Pampady

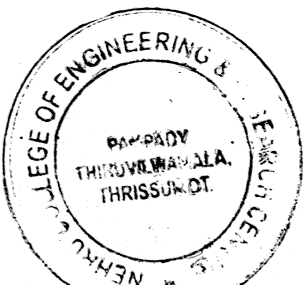
Date: 20/7/2016

*Forwarded to Principal  
S. Subash  
20/7/2016  
AS*

Sincerely,

*Preethi*

Preethi Mol B



*Sub*  
PRINCIPAL

Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thiruvananthapuram Dt  
686 044, Kerala



**NEHRU COLLEGE OF ENGINEERING AND RESEARCH**  
(NAAC Accredited)  
(Approved by AICTE, Affiliated to University of Calicut and APJ Abdul Kalam  
University, Kerala)

**ADMISSION TO ADD-ON COURSE (2016-2017)**

Applications are invited for admission for the Add-On Course offered by the Department of Computer Science and Engineering Engineering and Research Centre, Pampady, Thrissur.

**Eligibility Criteria:**

All UG/PG Engineering students of CSE department are Eligible

Interested Students can give their names to respective class advisors

**Timing:**

1 hour per day for 30 days from 4.00pm to 5.00pm. Saturday and Sunday at the discretion of the Department.

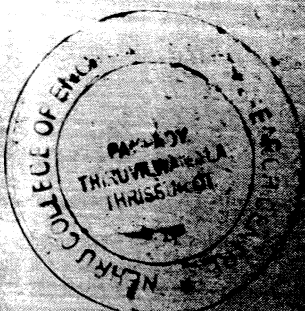
**Attendance:**

A minimum of 75% attendance is required for writing the examination

**Important Dates:**

Commencement of Classes: 22-08-2016

Examination date : 10-11-2016

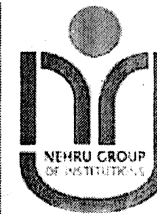


There are 21 Institutions under NGI offering multiple courses from various areas including Aeronautics, Engineering, Management, MBBS, Pharmacy, IT, Nursing, Arts and Science. NCERC is a ISO 9001:2015 certified institution affiliated to A P J Abdul Kalam Technological University and approved by All India Council for Technical Education (AICTE). It is also accredited by NAAC .It offers 6 undergraduate and 4 Postgraduate program in Engineering, Computer Applications and Management. To make the students professionally worthy, the college has Institutional membership of professional societies such as IEEE, ISTE, CSI, IE(INDIA), ISTD, AIMA, SEEM etc. to strengthen the values of the Institute and its Students. College campus is located on the northern slopes of Thiruvilwamala, which merges with the banks of the holy river Nila. This undulating terrain of 40 acres with lush green vegetation is continuously swept and hugged by the gentle northern breeze that brings the purity, serenity and sweetness of the river Nila. This picturesque location shall linger nostalgically in the minds of anybody visiting this beautiful area. Endowed with an enchanting and breath taking topography, lush green natural vegetation, virgin land, pollution free atmosphere, moderate temperature, plentiful of nectar like fresh water and salubrious climate, this is a sought after place for healthy life, clear thinking and pleasant learning pursuits.

## Contact us

04884 282070 284000

[www.ncerc.ac.in](http://www.ncerc.ac.in)



Nehru College of Engineering and  
Research Centre, Pampady,  
Thiruvilwamala, Thrissur - 680588



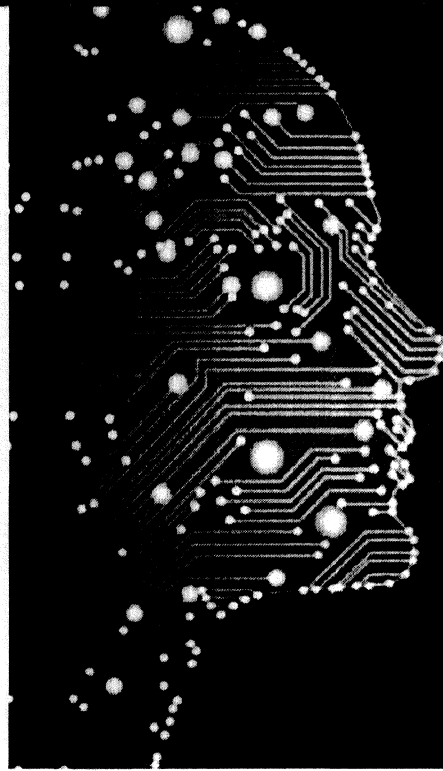
Nehru College of Engineering and Research Centre (NCERC), one of the premier and vibrant Technical Institutions in Kerala, was started in the year 2002 under Nehru Group of Institutions (NGI) which was established in 1968 by Late Shri P. K. Das.

*Signature*

Principal  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thrissur Dt.  
Pin - 680 597 Kerala

Certificate course on

# Artificial Intelligence



Course Coordinator

Ms.Preeti Mol

Date of Commencement

22/8/2016

Time:4.00pm-5.00pm

## About the course

Artificial intelligence (AI), sometimes called machine intelligence, is intelligence demonstrated by machines, unlike the natural intelligence displayed by humans and animals. Leading AI textbooks define the field as the study of "intelligent agents": any device that perceives its environment and takes actions that maximize its chance of successfully achieving its goals.

The main research topics in AI include: problem solving, reasoning, planning, natural language understanding, computer vision, automatic programming, machine learning, and so on. Of course, these topics are closely related with each other. The main purpose of this course is to provide the most fundamental knowledge to the students so that they can understand what the AI is.



Principal  
Panipady Engineering and Research Centre  
Panipady Thiruvananthapuram, Thiruvananthapuram Dt  
Pin 680 597 Kerala

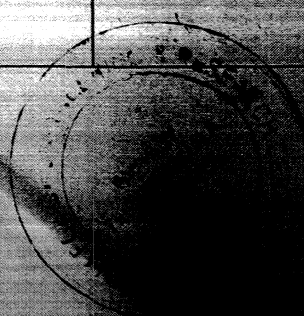


**NEHRU COLLEGE OF ENGINEERING AND RESEARCH  
(NAAC Accredited)**

(Approved by AICTE, Affiliated to University of Calicut and APJ Abdul Kalam  
University)

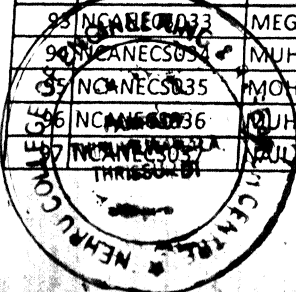
**ARTIFICIAL INTELLIGENCE CERTIFIED COURSE  
SYLLABUS**

Module	Contents
I	Introduction to AI-Problem formulation, Problem Definition -Production systems, Problem characteristics, Production system characteristics -Specialized production system- Problem solving methods ,Hill Climbing-Depth first and Breadth first, Constraints satisfaction
II	Game playing – Knowledge representation Knowledge representation using Predicate logic Introduction to predicate calculus, Resolution Use of predicate calculus - Knowledge representation -Production based system, Rule based system. Inference – Backward chaining Forward chaining
III	Basic plan generation systems – Simple Advanced plan generation systems – Heuristic Expert systems – Architecture of expert systems Roles of expert systems – Knowledge Acquisition – Meta knowledge – Heuristic Typical expert systems – MYCIN



**ARTIFICIAL INTELLIGENCE  
ATTENDANCE SHEET**

NAME	22/8	23/8	24/8	29/8	30/8	31/8	5/9	6/9	7/9	12/9	13/9	14/9	19/9	20/9	21/9	26/9	27/9	28/9	3/10	4/10	5/10	10/10	11/10	12/10	17/10	18/10	23/10	24/10	29/10	30/10	31/10
ARUN K	a	/	/	/	/	/	/	/	a	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
ARUN K L	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
ARYA PRAKASH	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
ASHIDA C	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
ASHIN P CHANDRAN	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
ASHIQ JURAI M M	a	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
BALALINATH R	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
BALU RADHAKRISHNAN	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
DEEPHY C	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
DHANESH K R	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
HARIKRISHNAN P N	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
HARI SANKAR K M	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
HARISHMA J	a	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
INDU K S	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
JENI NARAYANAN L A	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
JERIN K ROY	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
JISHNU P	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
JITHIN RAJEEV	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
JYOTISH K V	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
KAVYA T S	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
KRISHNA PRASAD P V	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
LAKSHMI K	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
MEGALA G	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
MUHAMMED JUMAIL	a	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
MOHAMMED RIYAS R	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
MUHAMMED RAFI E	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
NAULA HANEEF	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/



	NEETHA M	a	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	RADHIKA K	/	/	/	/	a	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	RESHMA V G	/	a	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	SACHIN SUNIL KUMAR	/	/	/	/	/	a	/	/	/	/	/	/	/	/	/	o	/	/	/	/
	SANJAY VIDYANATHAN	/	/	/	/	/	/	/	a	/	/	/	/	/	/	/	/	/	/	/	/
	SHAMEEMA M	/	/	/	/	/	/	/	/	/	/	a	/	/	/	/	/	/	/	/	/
	SHIBU S NARAYANAN	/	/	/	/	/	/	/	/	/	/	/	/	a	/	/	/	/	/	/	/
	SIDHARTH P K	/	/	/	a	/	/	/	/	/	/	/	/	/	/	/	a	/	/	/	/
	SNEHA T J	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	a
	SREERAJ M	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	SRINJU M	/	a	/	/	/	/	/	/	/	a	/	/	/	/	a	/	/	/	/	/
	SRUTHI NAIR	/	a	/	/	/	/	/	/	a	/	/	/	/	/	/	/	/	/	/	/
	SURYA S	/	/	/	/	a	/	/	/	a	/	/	/	/	/	/	/	/	/	/	/
	THOOLIKA C A	/	/	/	/	/	/	/	a	/	/	/	/	/	/	/	/	/	/	/	/
112	VIDYA WARRIER	/	/	a	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
113	VINEESH A V	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
114	VISHNU K J	/	/	/	/	/	/	/	/	/	o	/	/	/	/	/	/	/	/	/	/
115	VIVEK H	/	/	/	/	a	/	/	/	/	/	/	/	a	/	/	/	/	/	/	/
116	VIVEK M V	/	/	/	/	/	/	/	/	a	/	/	/	/	/	/	/	/	/	/	/
117	VIVEK R	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
118	YASASS C	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
119	ADARSH	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
120	MEGHA	/	/	a	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
121	SANJU SUKUMARAN	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/

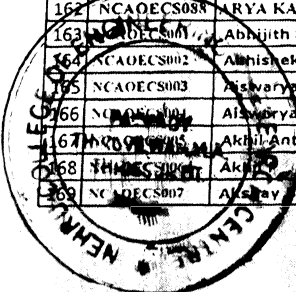
6 3 2 2 7 2 2 1 6 4 5 4 1 4 1  
~~6 3 2 2 7 2 2 1 6 4 5 4 1 4 1~~



ARTIFICIAL INTELLIGENCE  
ATTENDANCE SHEET

NAME	22/8	23/8	24/8	29/8	30/8	31/8	5/9	6/9	7/9	12/9	13/9	14/9	19/9	20/9	21/9	26/9	27/9	28/9	29/9	30/9
NCAOEC001 KAMIR MUHAMMED				o									a							
NCAOEC002 MANEESHA MOHANAN																				
NCAOEC003 NIERIN ANNA MATHEW																				
NCAOEC004 MERIN KEZIA PAULY																				
NCAOEC005 MOHAMMED SHAFEEQ T P																				
NCAOEC006 NADEER ABDUL HAZEEB																				
NCAOEC007 NEESHMA P R																				
NCAOEC008 NEETHU A B																				
NCAOEC009 NEHADAS P																				
NCAOEC010 NITHIN M																				
NCAOEC011 NIZIN K T																				
NCAOEC012 NOORMUHAMMED M K																				
NCAOEC013 PUNAM A NAIR																				
NCAOEC014 RAHUL R				a																
NCAOEC015 RAJULRAJ P	a																			
NCAOEC016 RANJITH R										a										
NCAOEC017 RENUKA P				a																
NCAOEC018 RESHMA S																				
NCAOEC019 RINU MOIDEENKUTTY													a							
NCAOEC020 SANDHYA C																				
NCAOEC021 SANDRA S																				
NCAOEC022 SANJAY M																				
NCAOEC023 SANOOP R																				
NCAOEC024 SHAHANA N										a										
NCAOEC025 SHYAM SHANKAR S				a																
NCAOEC026 SNEHA SANTHOSH																				
NCAOEC027 SNEHA V												a								
NCAOEC028 SOUPARNIKA	a																			
NCAOEC029 SOWMYAMOLA				a																
NCAOEC030 SREERAJ THAMPAN												a	a							
NCAOEC031 SRUTHY PRADEEP																				
NCAOEC032 SUDHIL C M																				
NCAOEC033 SUKANYA C																				
NCAOEC034 SUNISH M																				
NCAOEC035 SURYA P S										a										
NCAOEC036 SUSMITHA CP																				
NCAOEC037 VISHNU M																				
NCAOEC038 VIVEK V																				
NCAOEC039 VRINDA MOHAN K P																				
NCAOEC040 ZACHARIAH C MATHEW																				
NCAOEC041 ARYA KALADHARAN																				
NCAOEC042 Abhijith S																				
NCAOEC043 Abhishek S																				
NCAOEC044 Aiswarya Tm										a										
NCAOEC045 Aiswarya V																				
NCAOEC046 Akhil Antony																				
NCAOEC047 Akhil																				
NCAOEC048 Akhil																				
NCAOEC049 Akshay Abu	a																			

4 0 0 4 3 3 1 1 4 2 2 3 0 2 5

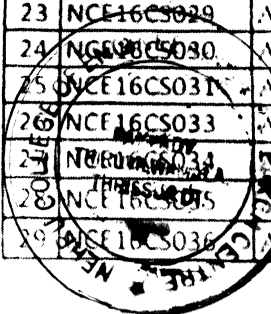




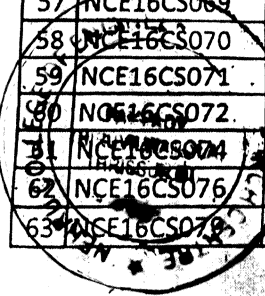


**ARTIFICIAL INTELLIGENCE  
ATTENDANCE SHEET**

NAME	22/8	23/8	24/8	29/8	30/8	31/8	5/9	6/9	7/9	12/9	13/9	14/9	19/9	20/9	21/9	24/9	27/9	28/9	2/10	3/10	7/10
Abhinand N	/	/	/	/	/	a	/	/	/	/	/	/	a	/	/	/	/	/	/	/	/
Abhith P	/	/	/	/	/	/	/	a	/	a	/	/	/	/	/	a	/	/	/	/	/
Acksa Varghese	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
Adarsh R	/	/	/	a	/	/	/	/	/	a	/	/	/	/	/	/	a	/	/	/	/
Adithyan D	/	/	/	/	/	a	/	/	/	a	/	/	/	/	/	/	/	/	/	/	a
Aditya Padmanabhan	/	a	/	/	/	/	/	a	/	/	/	/	/	/	/	/	/	/	a	/	/
Agil Krishna	/	/	/	a	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
Ahlad V K	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
Aiswarya Jagadees	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
Aiswarya Raj	/	/	a	/	/	/	/	/	/	a	/	/	/	/	/	/	/	/	a	/	/
Ajay E K	/	/	/	/	a	/	/	/	/	/	/	/	a	/	/	/	/	/	/	/	/
Ajmal Roshan K C	/	/	a	/	/	/	/	/	/	a	/	/	/	/	/	/	/	/	a	/	/
Akhila V	/	/	/	/	a	a	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
Akhil M	/	/	/	/	/	/	/	/	/	a	/	/	/	/	/	/	/	/	a	/	/
Akhil P	/	/	/	/	a	/	/	/	/	a	/	/	/	/	/	/	/	/	a	/	/
Akshay Kumar R	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
Amrutha R	/	/	a	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
Anand Krishnan N M	/	/	/	/	a	/	/	/	/	/	/	/	/	/	/	a	/	/	/	/	/
Anjana R	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
Ansar A	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
Anupriya Vjayan E K	/	/	a	/	/	/	/	/	/	/	/	/	/	/	/	a	/	/	/	/	/
Archana R	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
Ardra P	/	/	a	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
Arjun Balachandran	/	/	/	/	a	/	/	/	/	a	/	/	/	/	/	/	/	/	/	/	/
Arjun P	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
Athira Murali T E	/	/	a	/	a	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
Asha I Nair	/	/	a	/	/	/	/	/	/	a	/	/	/	/	/	/	/	/	/	/	/
Asha	/	/	a	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
Asha Showkath	/	/	a	/	/	/	/	/	/	a	/	/	/	/	/	/	/	/	/	/	/



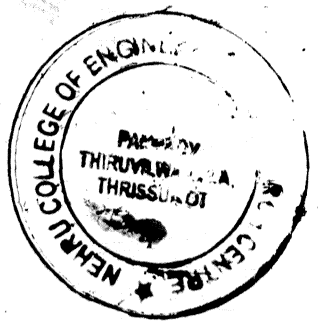
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
33	NCE16CS038	Bijith Kaladharan	/	/	a	/	/	/	/	/	a	/	/	/	/	/	/	/	/	/	/	/	/
34	NCE16CS039	Chaithra K M	/	/	/	/	a	/	a	/	/	/	/	/	/	/	/	/	/	/	/	/	/
35	NCE16CS040	Cheloor Saravanan Mohandas	/	/	/	/	/	/	/	/	a	/	/	/	/	/	a	/	/	/	/	/	/
36	NCE16CS041	Deepthidas R	/	/	a	/	/	/	a	/	/	/	/	/	/	/	a	/	/	/	/	/	/
37	NCE16CS042	Dhanish I	/	/	a	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
38	NCE16CS043	Dhanya V	/	a	/	/	/	/	/	/	a	/	/	/	/	/	/	/	a	/	/	/	/
39	NCE16CS044	Dhaya V Nair	/	/	/	/	a	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
40	NCE16CS045	Dhrishya Vijayan	/	/	/	/	/	/	/	/	a	/	/	/	/	/	/	/	a	/	/	/	/
41	NCE16CS046	Fidha.c.s	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
42	NCE16CS047	Girish C	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
43	NCE16CS048	Gopika.g.nair	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
44	NCE16CS049	Gopika J	/	/	/	/	/	/	/	/	/	/	/	/	/	/	a	/	/	/	/	/	/
45	NCE16CS050	Gopika V	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
46	NCE16CS052	Greeshma Surendran Vadakkedath	/	/	/	/	/	/	/	/	a	/	/	/	/	/	a	/	/	/	/	/	/
47	NCE16CS056	Hridya A H	/	/	a	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
48	NCE16CS057	I B Amritha	/	/	a	/	/	/	/	/	a	/	/	/	/	/	/	/	/	/	/	/	/
49	NCE16CS060	Jishnu Raj	/	/	/	/	/	/	a	/	/	/	/	/	/	/	a	/	/	/	/	/	/
50	NCE16CS061	Jithin B	/	/	/	/	a	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
51	NCE16CS062	Karthik K S	/	/	a	/	/	/	a	/	/	/	/	/	/	/	/	/	/	/	/	/	/
52	NCE15CS039	Megha A U	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
53	NCE15CS053	Prasanth S	/	/	/	/	a	/	a	/	a	/	/	/	/	/	a	/	/	/	/	/	/
54	NCE16CS063	Kavya Prasad	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
55	NCE16CS064	Layana T V	/	a	/	/	/	/	/	/	/	/	/	/	/	/	a	/	/	/	/	/	/
56	NCE16CS065	Madheena Beegham A	/	/	/	/	a	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
57	NCE16CS066	Manju K M	/	a	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
58	NCE16CS067	M Manu	/	/	/	/	/	/	a	/	a	/	/	/	/	/	/	/	/	/	/	/	/
59	NCE16CS068	Mathew Albert Shibu	/	/	a	/	/	/	/	/	/	/	/	/	/	/	a	/	/	/	/	/	/
60	NCE16CS069	Minu. O	/	/	a	/	/	/	/	/	/	/	/	/	/	/	a	/	/	/	/	/	/
61	NCE16CS070	Mohammed Faisal K V	/	a	/	/	a	/	/	/	a	/	/	/	/	/	/	/	/	/	/	/	/
62	NCE16CS071	Mridula Parthan B	/	/	a	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
63	NCE16CS072	Muhammed Mubashir. T	/	/	a	/	/	/	/	/	a	/	/	/	/	/	a	/	/	/	/	/	/
64	NCE16CS074	Nair Krishnanjali Krishnan	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
65	NCE16CS075	Nikhil M	/	a	/	/	a	/	/	/	/	a	/	/	/	/	/	/	/	/	/	/	/
66	NCE16CS076	Niyas S	/	a	/	/	a	/	/	/	/	a	/	/	/	/	/	/	/	/	/	/	/





			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
98	LNCE16CS5123	Vinduja Narayanan K	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
99	NCE15CS047	Nirmal K	/	/	/	/	/	/	/	a	a	/	/	/	/	/	/	/	/	/	/	/
100	NCE16Cs112	Surjith	/	/	a	/	/	/	/	/	a	/	/	/	/	/	/	/	/	/	/	/

2 11 20 5 15 5 7 6 22 1 4 6 13 3 2 8 6 5  
P P





**NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE**  
(NAAC Accredited)



(Approved by AICTE. Affiliated to University of Calicut and APJ Abdul Kalam Technological University)

1. In LISP, the function returns the list that results after the first element is removed (the rest of the list), is \_\_\_\_\_

- a) car
- b) last
- c) cons
- d) cdr

2. Which of the following contains the output segments of Artificial Intelligence programming?

- a) Printed language and synthesized speech
- b) Manipulation of physical object
- c) Locomotion
- d) All of the mentioned

3. LISP was created by?

- a) John McCarthy
- b) Marvin Minsky
- c) Alan Turing
- d) Allen Newell and Herbert Simon

4. Expert Ease was developed under the direction of \_\_\_\_\_

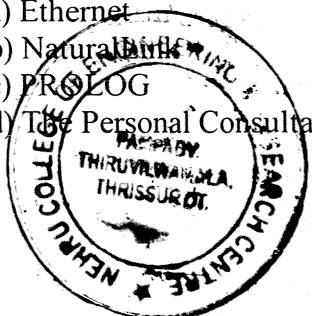
- a) John McCarthy
- b) Donald Michie
- c) Lofti Zadeh
- d) Alan Turing

5. An Artificial Intelligence system developed by Terry A. Winograd to permit an interactive dialogue about a domain he called blocks-world.

- a) SHRDLU
- b) SIMD
- c) BACON
- d) STUDENT

6. MLMenu, a natural language interface for the TI Explorer, is similar to

- a) Ethernet
- b) Natural Language
- c) PROLOG
- d) To Personal Consultant



**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala, Thirissur Dt  
Pin 680 597 Kerala

7. Strong Artificial Intelligence is \_\_\_\_\_
- a) the embodiment of human intellectual capabilities within a computer
  - b) a set of computer programs that produce output that would be considered to reflect intelligence if it were generated by humans
  - c) the study of mental faculties through the use of mental models implemented on a computer
  - d) all of the mentioned

8. The traditional way to exit and LISP system is to enter \_\_\_\_\_
- a) quit
  - b) exit
  - c) bye
  - d) ok

9. In which of the following situations might a blind search be acceptable?
- a) real-life situation
  - b) complex game
  - c) small search space
  - d) all of the mentioned

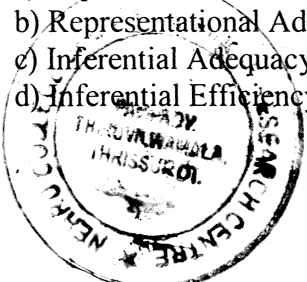
10. What is Artificial intelligence?
- a) Putting your intelligence into Computer
  - b) Programming with your own intelligence
  - c) Making a Machine intelligent
  - d) Playing a Game

11. Which search method takes less memory?
- a) Depth-First Search
  - b) Breadth-First search
  - c) Optimal search
  - d) Linear Search

12. A heuristic is a way of trying \_\_\_\_\_
- a) To discover something or an idea embedded in a program
  - b) To search and measure how far a node in a search tree seems to be from a goal
  - c) To compare two nodes in a search tree to see if one is better than the other is
  - d) All of the mentioned

13. How do you represent "All dogs have tails"?
- a)  $\forall x: \text{dog}(x) \rightarrow \text{tail}(x)$
  - b)  $\forall x: \text{dog}(x) \rightarrow \text{tail}(y)$
  - c)  $\forall x: \text{dog}(y) \rightarrow \text{tail}(x)$
  - d)  $\forall x: \text{dog}(x) \rightarrow \text{tail}(x)$

14. Which is not a property of representation of knowledge?
- a) Representational Verification
  - b) Representational Adequacy
  - c) Inferential Adequacy
  - d) Inferential Efficiency



*Chs*  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala, Thirissur Dt  
Pin 680 597 Kerala

15. What was originally called the "imitation game" by its creator?

- a) The Turing Test
- b) LISP
- c) The Logic Theorist
- d) Cybernetics

16. An expert system differs from a database program in that only an expert system

- a) contains declarative knowledge
- b) contains procedural knowledge
- c) features the retrieval of stored information
- d) expects users to draw their own conclusions

17. Natural language understanding is used in \_\_\_\_\_

- a) natural language interfaces
- b) natural language front ends
- c) text understanding systems
- d) all of the mentioned

18. Which is the first AI programming language?

- a) BASIC
- b) FORTRAN
- c) IPL(Inductive logic programming)
- d) LISP

19. What is the main task of a problem-solving agent?

- a) Solve the given problem and reach to goal
- b) To find out which sequence of action will get it to the goal state
- c) All of the mentioned
- d) None of the mentioned

20. What is state space?

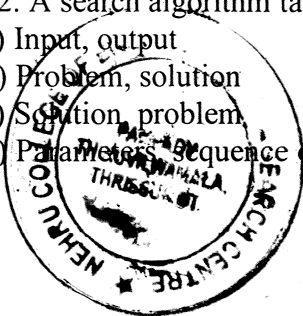
- a) The whole problem
- b) Your Definition to a problem
- c) Problem you design
- d) Representing your problem with variable and parameter

21. The problem-solving agent with several immediate options of unknown value can decide what to do by just examining different possible sequences of actions that lead to states of known value, and then choosing the best sequence. This process of looking for such a sequence is called Search.

- a) True
- b) False

22. A search algorithm takes \_\_\_\_\_ as an input and returns \_\_\_\_\_ as an output.

- a) Input, output
- b) Problem, solution
- c) Solution, problem
- d) Parameters, sequence of actions



**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thiruvananthapuram Dt  
Pin - 680 597 Kerala

23. A problem in a search space is defined by one of these state.

- a) Initial state
- b) Last state
- c) Intermediate state
- d) All of the mentioned

24. The Set of actions for a problem in a state space is formulated by a \_\_\_\_\_

- a) Intermediate states
- b) Initial state
- c) Successor function, which takes current action and returns next immediate state
- d) None of the mentioned

25. A solution to a problem is a path from the initial state to a goal state. Solution quality is measured by the path cost function, and an optimal solution has the highest path cost among all solutions.

- a) True
- b) False

26. The process of removing detail from a given state representation is called \_\_\_\_\_

- a) Extraction
- b) Abstraction
- c) Information Retrieval
- d) Mining of data

27. The process of removing detail from a given state representation is called \_\_\_\_\_

- a) Extraction
- b) Abstraction
- c) Information Retrieval
- d) Mining of data

28. The \_\_\_\_\_ is a touring problem in which each city must be visited exactly once. The aim is to find the shortest tour.

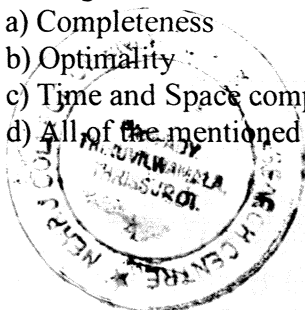
- a) Finding shortest path between a source and a destination
- b) Travelling Salesman problem
- c) Map coloring problem
- d) Depth first search traversal on a given map represented as a graph


29. Web Crawler is a/an \_\_\_\_\_

- a) Intelligent goal-based agent
- b) Problem-solving agent
- c) Simple reflex agent
- d) Model based agent

30. What is the major component/components for measuring the performance of problem solving?

- a) Completeness
- b) Optimality
- c) Time and Space complexity
- d) All of the mentioned



  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thiruvananthapuram Dt  
Pin 680 597 Kerala

31. A production rule consists of \_\_\_\_\_
- a) A set of Rule
  - b) A sequence of steps
  - c) Set of Rule & sequence of steps
  - d) Arbitrary representation to problem
32. Which search method takes less memory?
- a) Depth-First Search
  - b) Breadth-First search
  - c) Linear Search
  - d) Optimal search
33. Which is the best way to go for Game playing problem?
- a) Linear approach
  - b) Heuristic approach (Some knowledge is stored)
  - c) Random approach
  - d) An Optimal approach
34. Which search strategy is also called as blind search?
- a) Uninformed search
  - b) Informed search
  - c) Simple reflex search
  - d) All of the mentioned
35. How many types are available in uninformed search method?
- a) 3
  - b) 4
  - c) 5
  - d) 6
36. Which search is implemented with an empty first-in-first-out queue?
- a) Depth-first search
  - b) Breadth-first search
  - c) Bidirectional search
  - d) None of the mentioned
37. When is breadth-first search is optimal?
- a) When there is less number of nodes
  - b) When all step costs are equal
  - c) When all step costs are unequal
  - d) None of the mentioned
38. How many successors are generated in backtracking search?
- a) 1
  - b) 2
  - c) 3
  - d) 4
39. What is the space complexity of Depth-first search?
- a) O(b)

- b)  $O(bl)$
- c)  $O(m)$
- d)  $O(bm)$

40. How many parts does a problem consists of?

- a) 1
- b) 2
- c) 3
- d) 4

41. Which algorithm is used to solve any kind of problem?

- a) Breadth-first algorithm
- b) Tree algorithm
- c) Bidirectional search algorithm
- d) None of the mentioned

42. Which search algorithm imposes a fixed depth limit on nodes?

- a) Depth-limited search
- b) Depth-first search
- c) Iterative deepening search
- d) Bidirectional search

43. Which search implements stack operation for searching the states?

- a) Depth-limited search
- b) Depth-first search
- c) Breadth-first search
- d) None of the mentioned

44. \_\_\_\_\_ are mathematical problems defined as a set of objects whose state must satisfy a number of constraints or limitations.

- a) Constraints Satisfaction Problems
- b) Uninformed Search Problems
- c) Local Search Problems
- d) All of the mentioned

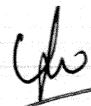
45. Which of the Following problems can be modeled as CSP?

- a) 8-Puzzle problem
- b) 8-Queen problem
- c) Map coloring problem
- d) All of the mentioned

46. What among the following constitutes to the incremental formulation of CSP?

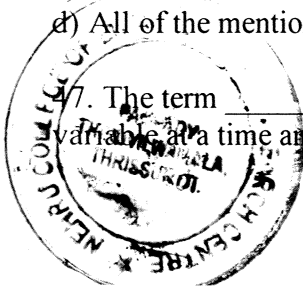
- a) Path cost
- b) Goal cost
- c) Successor function
- d) All of the mentioned

47. The term \_\_\_\_\_ is used for a depth-first search that chooses values for one variable at a time and returns when a variable has no legal values left to assign.



**PRINCIPAL**

Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thrissur Dt  
Pin: 680 597, Kerala



- a) Forward search
- b) Backtrack search
- c) Hill algorithm
- d) Reverse-Down-Hill search

48. To overcome the need to backtrack in constraint satisfaction problem can be eliminated by \_\_\_\_\_

- a) Forward Searching
- b) Constraint Propagation
- c) Backtrack after a forward search
- d) Omitting the constraints and focusing only on goals

49. The BACKTRACKING-SEARCH algorithm in Figure 5.3 has a very simple policy for what to do when a branch of the search fails: back up to the preceding variable and try a different value for it. This is called chronological-backtracking. It is also possible to go all the way to set of variable that caused failure.

- a) True
- b) False

50. Consider a problem of preparing a schedule for a class of student. What type of problem is this?

- a) Search Problem
- b) Backtrack Problem
- c) CSP
- d) Planning Problem

51. Constraint satisfaction problems on finite domains are typically solved using a form of \_\_\_\_\_

- a) Search Algorithms
- b) Heuristic Search Algorithms
- c) Greedy Search Algorithms
- d) All of the mentioned

52. Solving a constraint satisfaction problem on a finite domain is an/a \_\_\_\_\_ problem with respect to the domain size.

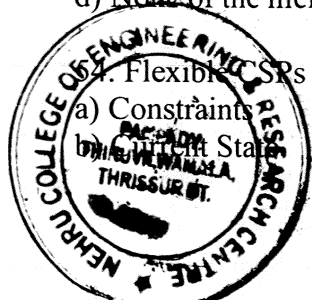
- a) P complete
- b) NP complete
- c) NP hard
- d) Domain dependent

53. \_\_\_\_\_ is/are useful when the original formulation of a problem is altered in some way, typically because the set of constraints to consider evolves because of the environment.

- a) Static CSPs
- b) Dynamic CSPs
- c) Flexible CSPs
- d) None of the mentioned

54. Flexible CSPs relax on \_\_\_\_\_

- a) Constraints
- b) Problem State
- c) Variables
- d) Domains



PRINCIPAL

Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thiruvananthapuram Dt  
Pin 680 597 Kerala

- c) Initial State
- d) Goal State

55. Language/Languages used for programming Constraint Programming includes

- a) Prolog
- b) C#
- c) C
- d) Fortran

56. Backtracking is based on \_\_\_\_\_

- a) Last in first out
- b) First in first out
- c) Recursion
- d) Both Last in first out & Recursion

57. Constraint Propagation technique actually modifies the CSP problem.

- a) True
- b) False

58. When do we call the states are safely explored?

- a) A goal state is unreachable from any state
- b) A goal state is denied access
- c) A goal state is reachable from every state
- d) None of the mentioned

59. Which of the following algorithm is generally used CSP search algorithm?

- a) Breadth-first search algorithm
- b) Depth-first search algorithm
- c) Hill-climbing search algorithm
- d) None of the mentioned

60. General games involves \_\_\_\_\_

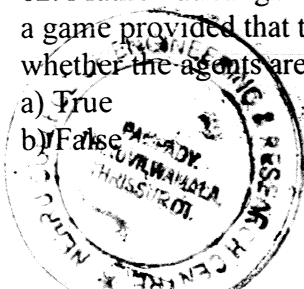
- a) Single-agent
- b) Multi-agent
- c) Neither Single-agent nor Multi-agent
- d) Only Single-agent and Multi-agent

61. Adversarial search problems uses \_\_\_\_\_

- a) Competitive Environment
- b) Cooperative Environment
- c) Neither Competitive nor Cooperative Environment
- d) Only Competitive and Cooperative Environment

62. Mathematical game theory, a branch of economics, views any multi-agent environment as a game provided that the impact of each agent on the others is "significant," regardless of whether the agents are cooperative or competitive.

- a) True
- b) False



PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Panipady, Thiruvilwamala, Thiruvananthapuram Dt  
Pin 680 597 Kerala

63. Zero sum games are the one in which there are two agents whose actions must alternate and in which the utility values at the end of the game are always the same.

- a) True
- b) False

64. Zero sum game has to be a \_\_\_\_\_ game.

- a) Single player
- b) Two player
- c) Multiplayer
- d) Three player

65. A game can be formally defined as a kind of search problem with the following components.

- a) Initial State
- b) Successor Function
- c) Terminal Test
- d) All of the mentioned

66. The initial state and the legal moves for each side define the \_\_\_\_\_ for the game.

- a) Search Tree
- b) Game Tree
- c) State Space Search
- d) Forest

67. General algorithm applied on game tree for making decision of win/lose is \_\_\_\_\_

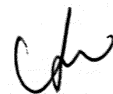
- a) DFS/BFS Search Algorithms
- b) Heuristic Search Algorithms
- c) Greedy Search Algorithms
- d) MIN/MAX Algorithms

68. The minimax algorithm computes the minimax decision from the current state. It uses a simple recursive computation of the minimax values of each successor state, directly implementing the defining equations. The recursion proceeds all the way down to the leaves of the tree, and then the minimax values are backed up through the tree as the recursion unwinds.

- a) True
- b) False

69. What is the complexity of minimax algorithm?

- a) Same as of DFS
- b) Space –  $bm$  and time –  $bm$
- c) Time –  $bm$  and space –  $bm$
- d) Same as BFS



PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thrissur Dt  
Pin 680 597 Kerala

70. Knowledge and reasoning also play a crucial role in dealing with \_\_\_\_\_ environment.

- a) Completely Observable
- b) Partially Observable
- c) Neither Completely nor Partially Observable
- d) Only Completely and Partially Observable

71. Treatment chosen by doctor for a patient for a disease is based on \_\_\_\_\_

- a) Only current symptoms
- b) Current symptoms plus some knowledge from the textbooks
- c) Current symptoms plus some knowledge from the textbooks plus experience
- d) All of the mentioned

72. A knowledge-based agent can combine general knowledge with current percepts to infer hidden aspects of the current state prior to selecting actions.

- a) True
- b) False

73. A) Knowledge base (KB) is consists of set of statements. B) Inference is deriving a new sentence from the KB.

Choose the correct option.

- a) A is true, B is true
- b) A is false, B is false
- c) A is true, B is false
- d) A is false, B is true

74. Wumpus World is a classic problem, best example of \_\_\_\_\_

- a) Single player Game
- b) Two player Game
- c) Reasoning with Knowledge
- d) Knowledge based Game

75.  $\alpha \models \beta$  (to mean that the sentence  $\alpha$  entails the sentence  $\beta$ ) if and only if, in every model in which  $\alpha$  is \_\_\_\_\_  $\beta$  is also \_\_\_\_\_

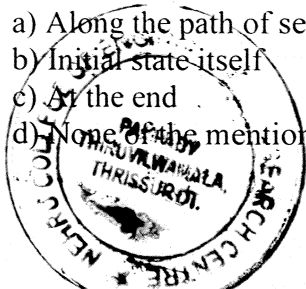
- a) True, true
- b) True, false
- c) False, true
- d) False, false.

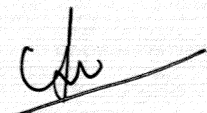
76. Which is not a property of representation of knowledge?

- a) Representational Verification
- b) Representational Adequacy
- c) Inferential Adequacy
- d) Inferential Efficiency

77. Where does the values of alpha-beta search get updated?

- a) Along the path of search
- b) Initial state itself
- c) At the end
- d) None of the mentioned



  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thrissur Dt  
Pin 680 597 Kerala

78. How the effectiveness of the alpha-beta pruning gets increased?

- a) Depends on the nodes
- b) Depends on the order in which they are executed
- c) All of the mentioned
- d) None of the mentioned

79. What are Semantic Networks?

- a) A way of representing knowledge
- b) Data Structure
- c) Data Type
- d) None of the mentioned

80. Graph used to represent semantic network is \_\_\_\_\_

- a) Undirected graph
- b) Directed graph
- c) Directed Acyclic graph (DAG)
- d) Directed complete graph

81. Which of the following are the Semantic Relations used in Semantic Networks?

- a) Meronymy
- b) Holonymy
- c) Hyponymy
- d) All of the mentioned

82. What is Meronymy relation?

- a) A is part of B
- b) B has A as a part of itself
- c) A is a kind of B
- d) A is superordinate of B

83. What is the frame?

- a) A way of representing knowledge
- b) Data Structure
- c) Data Type
- d) None of the mentioned

84. Frames in artificial intelligence is derived from semantic nets.

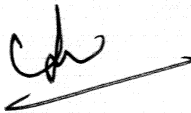
- a) True
- b) False

85. Which of the following elements constitutes the frame structure?

- a) Facts or Data
- b) Procedures and default values
- c) Frame names
- d) Frame reference in hierarchy

86. Like semantic networks, frames can be queried using spreading activation.

- a) True
- b) False

  
PRINCIPAL  
Mehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thrissur Dt  
Pin 680 597 Kerala

87. In LISP, the function returns t if <integer> is even and nil otherwise \_\_\_\_\_

- a) (evenp<integer>)
- b) (even <integer>)
- c) (numeven<integer>)
- d) (numnevenp<integer>)

88. Which of the following is an advantage of using an expert system development tool?

- a) imposed structure
- b) knowledge engineering assistance
- c) rapid prototyping
- d) all of the mentioned

89. An AI system developed by Daniel Bobrow to read and solve algebra word problems.

- a) SHRDLU
- b) SIMD
- c) BACON
- d) STUDENT

90. The "Turing Machine" showed that you could use a/an \_\_\_\_\_ system to program any algorithmic task.

- a) binary
- b) electro-chemical
- c) recursive
- d) semantic

91. MCC is investigating the improvement of the relationship between people and computers through a technology called \_\_\_\_\_

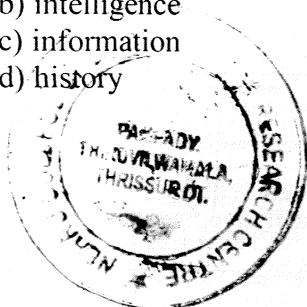
- a) computer-aided design
- b) human factors
- c) parallel processing
- d) all of the mentioned

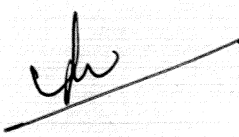
92. The first widely-used commercial form of Artificial Intelligence (AI) is being used in many popular products like microwave ovens, automobiles and plug in circuit boards for desktop PCs. It allows machines to handle vague information with a deftness that mimics human intuition. What is the name of this Artificial Intelligence?

- a) Boolean logic
- b) Human logic
- c) Fuzzy logic
- d) Functional logic

93. In his landmark book Cybernetics, Norbert Wiener suggested a way of modeling scientific phenomena using not energy, but \_\_\_\_\_

- a) mathematics
- b) intelligence
- c) information
- d) history



  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Paripady, Thiruvilwamala, Thrissur Dt  
Pin 680 597 Kerala

94. Which condition is used to cease the growth of forward chaining?

- a) Atomic sentences
- b) Complex sentences
- c) No further inference
- d) All of the mentioned

95. Which closely resembles propositional definite clause?

- a) Resolution
- b) Inference
- c) Conjunction
- d) First-order definite clauses

96. What is the condition of variables in first-order literals?

- a) Existentially quantified
- b) Universally quantified
- c) Both Existentially & Universally quantified
- d) None of the mentioned

97. Which are more suitable normal form to be used with definite clause?

- a) Positive literal
- b) Negative literal
- c) Generalized modus ponens
- d) Neutral literal

98. Though local search algorithms are not systematic, key advantages would include

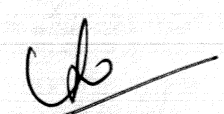
- a) Less memory
- b) More time
- c) Finds a solution in large infinite space
- d) Less memory & Finds a solution in large infinite space

99. A complete, local search algorithm always finds goal if one exists, an optimal algorithm always finds a global minimum/maximum.

- a) True
- b) False

100. \_\_\_\_\_ Is an algorithm, a loop that continually moves in the direction of increasing value – that is uphill.

- a) Up-Hill Search
- b) Hill-Climbing
- c) Hill algorithm
- d) Reverse-Down-Hill search

  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pattappan, Thiruvithirappur, Thiruvananthapuram  
Pin 630 597 Kerala



NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)



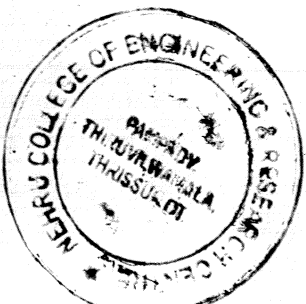
(Approved by AICTE, Affiliated to University of Calicut and APJ Abdul Kalam Technological University)

ANSWER KEY

1. d	11. a	21. a	31. c	41. b	51. d	61. a	71. c	81. d	91. b
2. d	12. d	22. b	32. a	42. a	52. b	62. a	72. a	82. a	92. c
3. a	13. a	23. a	33. b	43. b	53. b	63. b	73. a	83. a	93. c
4. b	14. a	24. c	34. a	44. a	54. a	64. c	74. c	84. a	94. c
5. a	15. a	25. a	35. c	45. d	55. a	65. d	75. a	85. a	95. d
6. b	16. b	26. b	36. b	46. d	56. d	66. b	76. a	86. a	96. b
7. a	17. d	27. d	37. b	47. b	57. a	67. d	77. a	87. a	97. c
9. c	19. c	29. a	39. d	49. a	59. b	69. a	79. a	89. d	99. a
10. c	20. d	30. d	40. d	50. c	60. d	70. b	80. b	90. a	100. b



PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thrissur Dt  
Pin 680 597 Kerala



FROM

M. PREETHY MOL

ASSISTANT PROFESSOR

CSE DEPARTMENT, NCERC PAMPADY

TO

HEAD OF THE DEPARTMENT

CSE DEPARTMENT

NCERC PAMPADY

SUBJECT: Requisition for Conducting Add-On Course on "ARTIFICIAL INTELLIGENCE"

Dear Sir,

As the Assistant Professor of Computer Science and Engineering, I would like to request permission to conduct an Add On Course on "ARTIFICIAL INTELLIGENCE" for the students of the course scheduled for July to October of this year. It is therefore requested that the permission be granted for the understanding of upcoming methodologies to enhance knowledge and skills. A workshop will be very key as it will bring together all teachers and students.

All UG/PG Engineering students of CSE Departments are Eligible for this course.

So, I kindly request you to provide the permission for doing the Add-on course.

Thank you for your consideration. I look forward to your response.

PLACE:

DATE:





**NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)**

(Approved by AICTE, Affiliated to University of Calicut and APJ Abdul Kalam Technological University)

1. In LISP, the function returns the list that results after the first element is removed from the list), is \_\_\_\_\_

- a) car
- b) last
- c) cons
- d) cdr

2. Which of the following contains the output segments of Artificial Intelligence programming?

- a) Printed language and synthesized speech
- b) Manipulation of physical object
- c) Locomotion
- d) All of the mentioned

3. LISP was created by?

- a) John McCarthy
- b) Marvin Minsky
- c) Alan Turing
- d) Allen Newell and Herbert Simon

4. Expert Ease was developed under the direction of

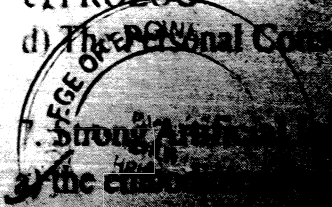
- a) John McCarthy
- b) Donald Michie
- c) Lofti Zadeh
- d) Alan Turing

5. An Artificial Intelligence system developed by Ed Sussman that could hold a dialogue about a domain he called blocks world was called

- a) SHRDLU
- b) SIMD
- c) BACON
- d) STUDENT

6. MLMenu, a natural language interface to a menu-driven system was developed by

- a) Ethernet
- b) NaturalLink
- c) PROLOG
- d) The Personal Computer





**NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE**  
(NAAC Accredited)

(Approved by AICTE, Affiliated to University of Calicut and  
University)

- h) a set of computer programs that produce output that would require human intelligence if it were generated by humans.  
c) the study of mental faculties through the use of mechanical devices.  
d) all of the mentioned

8. The traditional way to exit and LISP system is to enter  
a) quit  
b) exit  
c) bye  
d) ok

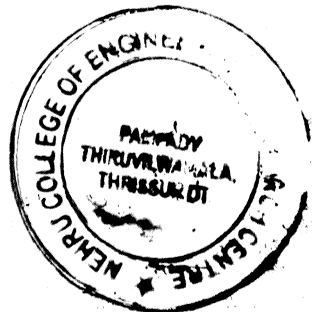
9. In which of the following situations might a blind search be appropriate?  
a) real-life situation  
b) complex game  
c) small search space  
d) all of the mentioned

10. What is Artificial intelligence?  
a) Putting your intelligence into Computer  
b) Programming with your own intelligence  
c) Making a Machine intelligent  
d) Playing a Game

11. Which search method takes less memory?  
a) Depth-First Search  
b) Breadth-First search  
c) Optimal search  
d) Linear Search

12. A heuristic is a way of trying  
a) To discover something or an idea empirically  
b) To search and measure how far a node is from the goal  
c) To compare two nodes in a search tree  
d) All of the mentioned

13. How do you represent "All dogs are tailless"  
a)  $\forall x: \text{dog}(x) \wedge \text{astail}(x)$   
b)  $\forall x: \text{dog}(x) \wedge \text{astail}(y)$   
c)  $\forall x: \text{dog}(y) \wedge \text{astail}(x)$   
d)  $\forall x: \text{dog}(x) \wedge \text{astail}(x)$



*Col*  
**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Parippady Thiruvilwamala, Thrissur Dt  
Pin - 686 597 Kerala



NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)

(Approved by AICTE, Affiliated to University of Calicut and APJ Abdul Kalam Technological University)

14. Which is not a property of representation of knowledge?

- a) Representational Verification
- b) Representational Adequacy
- c) Inferential Adequacy
- d) Inferential Efficiency

15. What was originally called the "imitation game" by IB?

- a) The Turing Test
- b) LISP
- c) The Logic Theorist
- d) Cybernetics

16. An expert system differs from a database program in that it

- a) contains declarative knowledge
- b) contains procedural knowledge
- c) features the retrieval of stored information
- d) expects users to draw their own conclusions

17. Natural language understanding is used in

- a) natural language interfaces
- b) natural language front ends
- c) text understanding systems
- d) all of the mentioned

18. Which is the first AI programming language?

- a) BASIC
- b) FORTRAN
- c) IPL (Inductive logic programming)
- d) LISP

19. What is the main task of a problem solver?

- a) Solve the given problem and return the solution
- b) To find out which sequence of actions will solve the problem
- c) All of the mentioned
- d) None of the mentioned

20. What is state space?

- a) The whole problem
- b) Your Definition of the problem
- c) Problem you are trying to solve
- d) Representing the problem



**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Thiruvlwamala, Thiruvananthapuram Dt  
Kerala



NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)

(Approved by AICTE, Affiliated to University of Calicut and APJ Abdul Kalam Technological University)

21. The problem-solving agent with several immediate options of unknown value chooses what to do by just examining different possible sequences of actions until it reaches a known value, and then choosing the best sequence. This process of exploring a solution sequence is called Search.

- a) True
- b) False

22. A search algorithm takes \_\_\_\_\_ as an input and returns \_\_\_\_\_ as an output.

- a) Input, output
- b) Problem, solution
- c) Solution, problem
- d) Parameters, sequence of actions

23. A problem in a search space is defined by one of these state.

- a) Initial state
- b) Last state
- c) Intermediate state
- d) All of the mentioned

24. The Set of actions for a problem in a state space is formulated as

- a) Intermediate states
- b) Initial state
- c) Successor function, which takes current state and returns its successor states
- d) None of the mentioned

25. A solution to a problem is a path from the initial state to a goal state. The cost of a solution is measured by the path cost function, and a search algorithm has the task of finding the least cost solution among all solutions.

- a) True
- b) False

26. The process of removing detail from a problem is called

- a) Extraction
- b) Abstraction
- c) Information Retrieval
- d) Mining of data

27. The process of removing detail from a problem is called

- a) Extraction
- b) Abstraction
- c) Information Retrieval
- d) Mining of data





NEHRU COLLEGE OF ENGINEERING AND RESEARCH INSTITUTE  
(NAAC Accredited)

(Approved by AICTE, Affiliated to University of Calicut and APJ Abdul Kalam Technological University)

28. The \_\_\_\_\_ is a touring problem in which each city must be visited exactly once. The aim is to find the shortest tour.

- a) Finding shortest path between a source and a destination
- b) Travelling Salesman problem
- c) Map coloring problem
- d) Depth first search traversal on a given map represented as a graph

29. Web Crawler is a/an \_\_\_\_\_

- a) Intelligent goal-based agent
- b) Problem-solving agent
- c) Simple reflex agent
- d) Model based agent

30. What is the major component/components for measuring the performance of a problem solving?

- a) Completeness
- b) Optimality
- c) Time and Space complexity
- d) All of the mentioned

31. A production rule consists of \_\_\_\_\_

- a) A set of Rule
- b) A sequence of steps
- c) Set of Rule & sequence of steps
- d) Arbitrary representation to problem

32. Which search method takes less memory?

- a) Depth-First Search
- b) Breadth-First search
- c) Linear Search
- d) Optimal search

33. Which is the best way to go for finding the solution?

- a) Linear approach
- b) Heuristic approach (Some knowledge about the problem)
- c) Random approach
- d) An Optimal approach

34. Which search strategy is also called as blind search?

- a) Uninformed search
- b) Informed search
- c) Simple reflex search
- d) All of the mentioned



NEHRU COLLEGE OF ENGINEERING AND RESEARCH  
(NAAC Accredited)

(Approved by AICTE, Affiliated to University of Calicut and APJ Abdul Kalam Technological University)

35. How many types are available in uninformed search method?
- a) 3
  - b) 4
  - c) 5
  - d) 6
36. Which search is implemented with an empty first-in-first-out queue?
- a) Depth-first search
  - b) Breadth-first search
  - c) Bidirectional search
  - d) None of the mentioned
37. When is breadth-first search is optimal?
- a) When there is less number of nodes
  - b) When all step costs are equal
  - c) When all step costs are unequal
  - d) None of the mentioned
38. How many successors are generated in backtracking search?
- a) 1
  - b) 2
  - c) 3
  - d) 4
39. What is the space complexity of Depth-first search?
- a)  $O(b)$
  - b)  $O(bl)$
  - c)  $O(m)$
  - d)  $O(bm)$
40. How many parts does a problem consists of?
- a) 1
  - b) 2
  - c) 3
  - d) 4
41. Which algorithm is used to solve and find optimal solution?
- a) Breadth-first algorithm
  - b) Tree algorithm
  - c) Bidirectional search algorithm
  - d) None of the mentioned
42. Which search algorithm is used to find the shortest path between two nodes?
- a) Depth-first search



NEHRU COLLEGE OF ENGINEERING AND TECHNOLOGY  
(NAAC Accredited)

(Approved by AICTE, Affiliated to University of Applied Sciences, Coimbatore  
University)

- b) Depth-first search
- c) Iterative deepening search
- d) Bidirectional search

43. Which search implements stack operation to explore nodes?

- a) Depth-limited search
- b) Depth-first search
- c) Breadth-first search
- d) None of the mentioned

44. \_\_\_\_\_ are mathematically defined problems that must satisfy a number of constraints or limitations.

- a) Constraints Satisfaction Problems
- b) Uninformed Search Problems
- c) Local Search Problems
- d) All of the mentioned

45. Which of the Following problems can be assigned to CSP?

- a) 8-Puzzle problem
- b) 8-Queen problem
- c) Map coloring problem
- d) All of the mentioned

46. What among the following constitutes heuristic cost function?

- a) Path cost
- b) Goal cost
- c) Successor function
- d) All of the mentioned

47. The term \_\_\_\_\_ is used to describe a search algorithm that uses a variable cost function to estimate the cost of a path.

- a) Forward search
- b) Backward search
- c) Hill climbing
- d) Reverse Hill climbing

48. To solve a problem using a search algorithm, the search space is defined by \_\_\_\_\_

- a) Forward search
- b) Backward search
- c) Hill climbing
- d) Reverse Hill climbing



NEHRU COLLEGE OF ENGINEERING AND RESEARCH  
(NAAC Accredited)

(Approved by AICTE, Affiliated to University of Calicut, Kerala University)

49. The BACKTRACKING-SEARCH algorithm in Figure 10.11 does not specify what to do when a branch of the search fails: back up to the previous node and try a different value for it. This is called **chronological backtracking**.  
way to set of variable that caused failure.

- a) True
- b) False

50. Consider a problem of preparing a schedule for a class. This is an example of what type of problem is this?

- a) Search Problem
- b) Backtrack Problem
- c) CSP
- d) Planning Problem

51. Constraint satisfaction problems on finite domains are solved using which of the following algorithms?

- a) Search Algorithms
- b) Heuristic Search Algorithms
- c) Greedy Search Algorithms
- d) All of the mentioned

52. Solving a constraint satisfaction problem on a finite domain is NP-complete with respect to the domain size.

- a) P complete
- b) NP complete
- c) NP hard
- d) Domain dependent

53. Dynamic CSPs are useful when the set of constraints changes over time. This is typically because the set of constraints is large and the domain is large.

- a) Static CSPs
- b) Dynamic CSPs
- c) Flexible CSPs
- d) None of the mentioned

54. Flexible CSPs are used to solve problems where the constraints are not fixed.

- a) Constraints
- b) Current State
- c) Initial State
- d) Goal State

55. Example of a constraint satisfaction problem is the N-Queens problem.



**NEHRU COLLEGE OF ENGINEERING AND RESEARCH**  
**(NAAC Accredited)**

(Approved by AICTE, Affiliated to University of Jammu  
University)

- b) C#
- c) C
- d) Fortran

56. Backtracking is based on \_\_\_\_\_

- a) Last in first out
- b) First in first out
- c) Recursion
- d) Both Last in first out & Recursion

57. Constraint Propagation technique actually involves \_\_\_\_\_

- a) True
- b) False

58. When do we call the states are safely explored \_\_\_\_\_

- a) A goal state is unreachable from any state
- b) A goal state is denied access
- c) A goal state is reachable from every state
- d) None of the mentioned

59. Which of the following algorithm is generally used for solving 8-puzzle \_\_\_\_\_

- a) Breadth-first search algorithm
- b) Depth-first search algorithm
- c) Hill-climbing search algorithm
- d) None of the mentioned

60. General games involves \_\_\_\_\_

- a) Single-agent
- b) Multi-agent
- c) Neither Single-agent nor Multi-agent
- d) Only Single-agent and Multi-agent

61. Adversarial game is played in \_\_\_\_\_

- a) Competitive environment
- b) Cooperative environment
- c) Neither Competitive nor Cooperative environment
- d) Only Cooperative environment

62. Mathematical game is \_\_\_\_\_

- a) game played in a competitive environment
- b) game played in a cooperative environment
- c) game played in a neither competitive nor cooperative environment
- d) game played in a only cooperative environment

agent environment regarding

Principal



NEHRU COLLEGE OF ENGINEERING AND RESEARCH  
(NAAC Accredited)

(Approved by AICTE, Affiliated to University of Mumbai, Institute of Engineering and Technology, University of Mumbai)

63. Zero sum games are the one in which there are two players and in which the utility values at the end of the game are zero.

- a) True
- b) False

64. Zero sum game has to be a \_\_\_\_\_ game.

- a) Single player
- b) Two player
- c) Multiplayer
- d) Three player

65. A game can be formally defined as a set of the following components.

- a) Initial State
- b) Successor Function
- c) Terminal Test
- d) All of the mentioned

66. The initial state and the legal moves are represented by

- a) Search Tree
- b) Game Tree
- c) State Space Search
- d) Forest

67. General algorithm as used in AI is

- a) DFS/BFS Search Algorithms
- b) Heuristic Search Algorithms
- c) Greedy Search Algorithms
- d) All of the mentioned

68. The search algorithm used in AI is

- a) DFS/BFS Search Algorithms
- b) Heuristic Search Algorithms
- c) Greedy Search Algorithms
- d) All of the mentioned



NEHRU COLLEGE OF ENGINEERING AND TECHNOLOGY  
(NAAC Accredited)

(Approved by AICTE, Affiliated to University of Kerala  
(University))

70. Knowledge and reasoning also play a crucial role in a human environment.

- a) Completely Observable
- b) Partially Observable
- c) Neither Completely nor Partially Observable
- d) Only Completely and Partially Observable

71. Treatment chosen by doctor for a patient is

- a) Only current symptoms
- b) Current symptoms plus some knowledge
- c) Current symptoms plus some knowledge and reasoning
- d) All of the mentioned

72. A knowledge-based agent can combine its knowledge with hidden aspects of the current state problem.

- a) True
- b) False

73. A) Knowledge base (KB) is consists of all the knowledge sentence from the KB

Choose the correct answer

- a) A is true, B is true
- b) A is false, B is false
- c) A is true, B is false
- d) A is false, B is true

74. Wumpus World is an example of

- a) Single player game
- b) Two player game
- c) Reasoning game
- d) Knowledge game



NEHRU COLLEGE OF ENGINEERING  
(NAAC ACCREDITED)

(Approved by AICTE, All India Institute of Technology, Madras)

77. Where does the values of applied force...

- a) Along the path of search
- b) Initial state itself
- c) At the end
- d) None of the mentioned

78. How the effectiveness of the algorithm...

- a) Depends on the nodes
- b) Depends on the order in which...
- c) All of the mentioned
- d) None of the mentioned

79. What are Semantic Networks...

- a) A way of representing knowledge
- b) Data Structure
- c) Data Type
- d) None of the mentioned

80. Graph used to represent...

- a) Undirected graph
- b) Directed graph
- c) Directed Acyclic graph
- d) Directed complete graph

81. Which of the following...

- a) Meronymy
- b) Holonymy
- c) Hyponymy
- d) All of the mentioned

82. Which of the following...

- a) Breadth First Search
- b) Depth First Search
- c) Heuristic Search
- d) All of the mentioned



NEHRU COLLEGE OF ENGINEERING AND RESEARCH  
(NAAC Accredited)

(Approved by AICTE, Affiliated to University of Calicut and APJ Abdul Kalam University)

14. Which is not a property of representation of knowledge?

- a) Representational Verification
- b) Representational Adequacy
- c) Inferential Adequacy
- d) Inferential Efficiency

15. What was originally called the "imitation game" by its creator?

- a) The Turing Test
- b) LISP
- c) The Logic Theorist
- d) Cybernetics

16. An expert system differs from a database program in that only an expert

- a) contains declarative knowledge
- b) contains procedural knowledge
- c) features the retrieval of stored information
- d) expects users to draw their own conclusions

17. Natural language understanding is used in

- a) natural language interfaces
- b) natural language front ends
- c) text understanding systems
- d) all of the mentioned

18. Which is the first AI programming language?

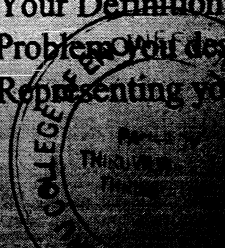
- a) BASIC
- b) FORTRAN
- c) IPL (Inductive logic programming)
- d) LISP

19. What is the main task of a problem solver?

- a) Solve the given problem and reach the goal
- b) To find out which sequence of actions will lead to the goal state
- c) All of the mentioned
- d) None of the mentioned

20. What is state space?

- a) The whole problem
- b) Your Definition to a problem
- c) Problem of the design
- d) Representing your problem





NEHRU COLLEGE OF ENGINEERING AND TECHNOLOGY  
(NAAC Accredited)

(Approved by AICTE, Affiliated to Anna University)

87. Frames in artificial intelligence is derived from  
 a) True  
 b) False

88. Which of the following elements constitute frames?  
 a) Facts or Data  
 b) Procedures and default values  
 c) Frame names  
 d) Frame reference in hierarchy

89. Like semantic networks, frames can be used to represent  
 a) True  
 b) False

90. In LISP, the function returns list of integers  
 a) (evenp <integer>)  
 b) (even <integer>)  
 c) (numeven <integer>)  
 d) (numnevenp <integer>)

91. Which of the following is an advantage of frames?  
 a) imposed structure  
 b) knowledge engineering friendly  
 c) rapid prototyping  
 d) all of the mentioned

92. An AI expert system is often used to solve  
 a) Simple problems  
 b) Simple and complex problems  
 c) Complex problems  
 d) Simple and complex problems



# NEHRU COLLEGE OF ENGINEERING AND TECHNOLOGY MADRAS

(Approved by AICTE, Affiliated to Anna University, Chennai)

- c) parallel processing
- d) all of the mentioned

92. The first widely-used commercial form of artificial intelligence is expert systems. Many popular products like microwave ovens, desktop PCs. It allows machines to imitate human intuition. What is the name of this logic?

- a) Boolean logic
- b) Human logic
- c) Fuzzy logic
- d) Functional logic

93. In his landmark book Cybernetics, Norbert Wiener described scientific phenomena using novel concepts.

- a) mathematics
- b) intelligence
- c) information
- d) history

94. Which condition is used to determine if a sentence is atomic?

- a) Atomic sentence
- b) Complex sentence
- c) No further inference
- d) All of the mentioned

95. Which of the following is not a type of inference?

- a) Rule based
- b) Inductive
- c) Combinatorial
- d) Deductive



# NEHRU COLLEGE ENGINEERING & TECHNOLOGY

(Approved by AICTE)

98. Though local search algorithm

- a) Less memory
- b) More time
- c) Finds a solution in large time
- d) Less memory & Finds a solution

99. A complete local search algorithm always finds a global minimum

- a) True
- b) False

100. An algorithm that increases the value of the objective function is called

- a) Up-Hill Search
- b) Hill-Climbing
- c) Hill algorithm
- d) Reversed Hill algorithm



**NEHRU COLLEGE OF ENGINEERING AND RESEARCH**  
**(NAAC Accredited)**

(Approved by AICTE, Affiliated to University of Calicut and APJ Abdul Kalam  
University)

1. In LISP, the function returns the list that results after the first element of the list is removed (i.e., the list). is \_\_\_\_\_
  - a) car
  - b) last
  - c) cons
  - d) cdr
  
2. Which of the following contains the output scope of AI programming?
  - a) Printed language and synthesized speech
  - b) Manipulation of physical object
  - c) Locomotion
  - d) All of the mentioned
  
3. LISP was created by?
  - a) John McCarthy
  - b) Marvin Minsky
  - c) Alan Turing
  - d) Allen Newell and Herbert Simon
  
4. Expert Ease was developed under the direction of?
  - a) John McCarthy
  - b) Donald Michie
  - c) Lofti Zadeh
  - d) Alan Turing
  
5. An Artificial Intelligence System that can hold a dialogue about a domain like a human is called as?
  - a) SHRDLU
  - b) SIMD
  - c) BACON
  - d) STUDENT
  
6. MLMenu is a menu driven system for?
  - a) Ethernet
  - b) Natural Language
  - c) PROLOG
  - d) Theorem Proving



NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)

(Approved by AICTE, Affiliated to University of Calicut and APJ Abdul Kalam Technological University)

- b) a set of computer programs that produce output that would be considered to reflect intelligence if it were generated by humans
- c) the study of mental faculties through the use of mental models implemented on a computer
- d) all of the mentioned

8. The traditional way to exit and LISP system is to enter \_\_\_\_\_

- a) quit
- b) exit
- c) bye
- d) ok

9. In which of the following situations might a blind search be acceptable?

- a) real-life situation
- b) complex game
- c) small search space
- d) all of the mentioned

10. What is Artificial intelligence?

- a) Putting your intelligence into Computer
- b) Programming with your own intelligence
- c) Making a Machine intelligent
- d) Playing a Game

11. Which search method takes less memory?

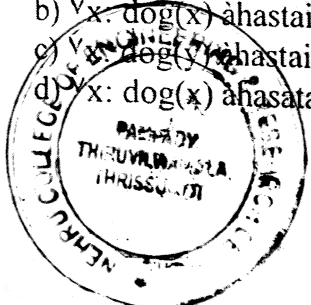
- a) Depth-First Search
- b) Breadth-First search
- c) Optimal search
- d) Linear Search

12. A heuristic is a way of trying \_\_\_\_\_

- a) To discover something or an idea embedded in a program
- b) To search and measure how far a node in a search tree seems to be from a goal
- c) To compare two nodes in a search tree to see if one is better than the other is
- d) All of the mentioned

13. How do you represent "All dogs have tails"?

- a)  $\forall x: \text{dog}(x) \rightarrow \text{astail}(x)$
- b)  $\forall x: \text{dog}(x) \rightarrow \text{astail}(y)$
- c)  $\forall x: \text{dog}(y) \rightarrow \text{astail}(x)$
- d)  $\forall x: \text{dog}(x) \rightarrow \text{astatail}(x)$



PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Panpady, Thiruvilwamala, Thirissur Dt  
Pin 680 597 Kerala



NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)

(Approved by AICTE, Affiliated to University of Calicut and APJ Abdul Kalam Technological University)

21. The problem-solving agent with several immediate options of unknown value can decide what to do by just examining different possible sequences of actions that lead to states of known value, and then choosing the best sequence. This process of looking for such a sequence is called Search.

- a) True
- b) False

22. A search algorithm takes \_\_\_\_\_ as an input and returns \_\_\_\_\_ as an output.

- a) Input, output
- b) Problem, solution
- c) Solution, problem
- d) Parameters, sequence of actions

23. A problem in a search space is defined by one of these state.

- a) Initial state
- b) Last state
- c) Intermediate state
- d) All of the mentioned

24. The Set of actions for a problem in a state space is formulated by a \_\_\_\_\_

- a) Intermediate states
- b) Initial state
- c) Successor function, which takes current action and returns next immediate state
- d) None of the mentioned

25. A solution to a problem is a path from the initial state to a goal state. Solution quality is measured by the path cost function, and an optimal solution has the highest path cost among all solutions.

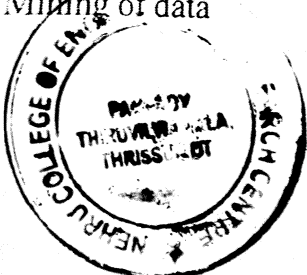
- a) True
- b) False

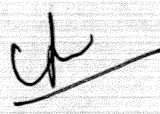
26. The process of removing detail from a given state representation is called \_\_\_\_\_

- a) Extraction
- b) Abstraction
- c) Information Retrieval
- d) Mining of data

27. The process of removing detail from a given state representation is called \_\_\_\_\_

- a) Extraction
- b) Abstraction
- c) Information Retrieval
- d) Mining of data



  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thiruvananthapuram  
Pin 680 597 Kerala



NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)

(Approved by AICTE, Affiliated to University of Calicut and APJ Abdul Kalam Technological University)

28. The \_\_\_\_\_ is a touring problem in which each city must be visited exactly once. The aim is to find the shortest tour.

a) Finding shortest path between a source and a destination

b) Travelling Salesman problem

c) Map coloring problem

d) Depth first search traversal on a given map represented as a graph

29. Web Crawler is a/an \_\_\_\_\_

a) Intelligent goal-based agent

b) Problem-solving agent

c) Simple reflex agent

d) Model based agent

30. What is the major component/components for measuring the performance of a search algorithm?

a) Completeness

b) Optimality

c) Time and Space complexity

d) All of the mentioned

31. A production rule consists of \_\_\_\_\_

a) A set of Rule

b) A sequence of steps

c) Set of Rule & sequence of steps

d) Arbitrary representation to problem

32. Which search method takes less memory?

a) Depth-First Search

b) Breadth-First search

c) Linear Search

d) Optimal search

33. Which is the best way to go for Game playing problem?

a) Linear approach

b) Heuristic approach (Some knowledge of the problem)

c) Random approach

d) An Optimal approach

34. Which search strategy is also called as blind search?

a) Uninformed search

b) Informed search

c) Simple reflex search

d) All of the mentioned



NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)

(Approved by AICTE, Affiliated to University of Calicut and APJ Abdul Kalam Technological University)

35. How many types are available in uninformed search method?  
a) 3  
b) 4  
c) 5  
d) 6

36. Which search is implemented with an empty first-in-first-out queue?  
a) Depth-first search  
b) Breadth-first search  
c) Bidirectional search  
d) None of the mentioned

37. When is breadth-first search is optimal?  
a) When there is less number of nodes  
b) When all step costs are equal  
c) When all step costs are unequal  
d) None of the mentioned

38. How many successors are generated in backtracking search?  
a) 1  
b) 2  
c) 3  
d) 4

39. What is the space complexity of Depth-first search?  
a)  $O(b)$   
b)  $O(bl)$   
c)  $O(m)$   
d)  $O(bm)$

40. How many parts does a problem consists of?  
a) 1  
b) 2  
c) 3  
d) 4

41. Which algorithm is used to solve any problem?  
a) Breadth-first algorithm  
b) Tree algorithm  
c) Bidirectional search algorithm  
d) None of the mentioned

42. Which search algorithm uses less space?  
a) Informed search



NEHRU COLLEGE OF ENGINEERING AND TECHNOLOGY  
(NAAC Accredited)

(Approved by AICTE, Affiliated to University of Calicut, Kerala  
University)

- b) Depth-first search
- c) Iterative deepening search
- d) Bidirectional search

43. Which search implements stack operation for searching the solution?

- a) Depth-limited search
- b) Depth-first search
- c) Breadth-first search
- d) None of the mentioned

44. \_\_\_\_\_ are mathematical problems which must satisfy a number of constraints or limitations.

- a) Constraints Satisfaction Problems
- b) Uninformed Search Problems
- c) Local Search Problems
- d) All of the mentioned

45. Which of the Following problems can be modeled as CSP?

- a) 8-Puzzle problem
- b) 8-Queen problem
- c) Map coloring problem
- d) All of the mentioned

46. What among the following cause the search to fail?

- a) Path cost
- b) Goal cost
- c) Successor function
- d) All of the mentioned

47. The term \_\_\_\_\_ is used to describe a variable at a time during the search.

- a) Forward search
- b) Backward search
- c) Hill algorithm
- d) Greedy search

48. The term \_\_\_\_\_ is used to describe a variable at a time during the search.



NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)

(Approved by AICTE, Affiliated to University of Calicut and API Abdul Kalam  
University)

49. The BACKTRACKING-SEARCH algorithm in Figure 5.3 has a decision node that asks what to do when a branch of the search fails: back up to the preceding node and try a different value for it. This is called **chronological-backtracking**. It is the best way to set of variable that caused failure.

- a) True
- b) False

50. Consider a problem of preparing a schedule for a class. This is a CSP. The problem is this?

- a) Search Problem
- b) Backtrack Problem
- c) CSP
- d) Planning Problem

51. Constraint satisfaction problems on finite domains are usually NP-complete.

- a) Search Algorithms
- b) Heuristic Search Algorithms
- c) Greedy Search Algorithms
- d) All of the mentioned

52. Solving a constraint satisfaction problem on a finite domain is NP-complete with respect to the domain size.

- a) P complete
- b) NP complete
- c) NP hard
- d) Domain dependent

53. \_\_\_\_\_ is/are useful when the original problem is NP-complete. One way, typically because the set of constraints is relaxed.

- a) Static CSPs
- b) Dynamic CSPs
- c) Flexible CSPs
- d) None of the mentioned

54. Flexible CSPs relax on

- a) Constraints
- b) Current State
- c) Initial State
- d) Goal State

55. Logical languages are



NEHRU COLLEGE OF ENGINEERING AND RESEARCH  
(NAAC Accredited)

(Approved by AICTE, Affiliated to University of Calicut and  
University)

- b) C#
- c) C
- d) Fortran

56. Backtracking is based on \_\_\_\_\_

- a) Last in first out
- b) First in first out
- c) Recursion
- d) Both Last in first out & Recursion

57. Constraint Propagation technique actually modifies the

- a) True
- b) False

58. When do we call the states are safely explored?

- a) A goal state is unreachable from any state
- b) A goal state is denied access
- c) A goal state is reachable from every state
- d) None of the mentioned

59. Which of the following algorithm is generally used for

- a) Breadth-first search algorithm
- b) Depth-first search algorithm
- c) Hill-climbing search algorithm
- d) None of the mentioned

60. General games involves \_\_\_\_\_

- a) Single-agent
- b) Multi-agent
- c) Neither Single-agent nor Multi-agent
- d) Only Single-agent and Multi-agent

61. Adversarial search involves \_\_\_\_\_

- a) Competitive Environment
- b) Cooperative Environment
- c) Neither Competitive nor Cooperative
- d) Only Competitive Environment

62. Mathematical model of a game played between two

- a) game played between two players
- b) game played between two players
- c) game played between two players
- d) game played between two players



NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)

(Approved by AICTE, Affiliated to University of Calicut and APJ Abdul Kalam Technological University)

63. Zero sum games are the one in which there are two agents whose actions must alternate and in which the utility values at the end of the game are always the same.

- a) True
- b) False

64. Zero sum game has to be a \_\_\_\_\_ game.

- a) Single player
- b) Two player
- c) Multiplayer
- d) Three player

65. A game can be formally defined as a kind of search problem with the following components.

- a) Initial State
- b) Successor Function
- c) Terminal Test
- d) All of the mentioned

66. The initial state and the legal moves for each side define the \_\_\_\_\_ for the game.

- a) Search Tree
- b) Game Tree
- c) State Space Search
- d) Forest

67. General algorithm applied on game tree for making decision of win/lose is

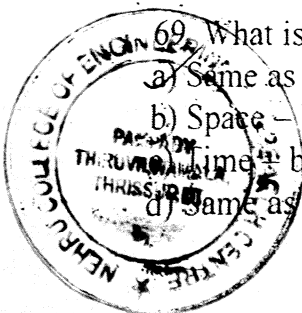
- a) DFS/BFS Search Algorithms
- b) Heuristic Search Algorithms
- c) Greedy Search Algorithms
- d) MIN/MAX Algorithms


68. The minimax algorithm computes the minimax decision from the current state. It uses a simple recursive computation of the minimax values of each successor state, directly implementing the defining equations. The recursion proceeds all the way down to the leaves of the tree, and then the minimax values are backed up through the tree as the recursion unwinds.

- a) True
- b) False

69. What is the complexity of minimax algorithm?

- a) Same as of DFS
- b) Space -  $bm$  and time -  $bm$
- c) Time -  $bm$  and space -  $bm$
- d) Same as BFS



  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala, Thirissur Dt  
Pin 680 597 Kerala



NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTER  
(NAAC Accredited)

(Approved by AICTE, Affiliated to University of Calicut and APJ Abdul Kalam Technological University)

70. Knowledge and reasoning also play a crucial role in dealing with environment.

- a) Completely Observable
- b) Partially Observable
- c) Neither Completely nor Partially Observable
- d) Only Completely and Partially Observable

71. Treatment chosen by doctor for a patient for a disease is based on

- a) Only current symptoms
- b) Current symptoms plus some knowledge from the textbooks
- c) Current symptoms plus some knowledge from the textbooks plus some knowledge from the patient
- d) All of the mentioned

72. A knowledge-based agent can combine general knowledge with its own hidden aspects of the current state prior to selecting actions.

- a) True
- b) False

73. A) Knowledge base (KB) is consists of set of statements and B) sentence from the KB.

Choose the correct option.

- a) A is true, B is true
- b) A is false, B is false
- c) A is true, B is false
- d) A is false, B is true

74. Wumpus World is a classic problem in AI.

- a) Single player Game
- b) Two player Game
- c) Reasoning with Knowledge
- d) Knowledge based Game

75. ' $\alpha \models \beta$ ' (to mean that  $\beta$  is a logical consequence of  $\alpha$ ) in which  $\alpha$  is  $\{p \vee q, r\}$  and  $\beta$  is  $\{p, r\}$ .

- a) True, true
- b) True, false
- c) False, true
- d) False, false

76. Which is not a representation of knowledge?



**NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE**  
(NAAC Accredited)

(Approved by AICTE, Affiliated to University of Calicut and APJ Abdul Kalam Technological University)

77. Where does the values of alpha-beta search get updated?

- a) Along the path of search
- b) Initial state itself
- c) At the end
- d) None of the mentioned

78. How the effectiveness of the alpha-beta pruning gets increased?

- a) Depends on the nodes
- b) Depends on the order in which they are executed
- c) All of the mentioned
- d) None of the mentioned

79. What are Semantic Networks?

- a) A way of representing knowledge
- b) Data Structure
- c) Data Type
- d) None of the mentioned

80. Graph used to represent semantic network is

- a) Undirected graph
- b) Directed graph
- c) Directed Acyclic graph (DAG)
- d) Directed complete graph

81. Which of the following are the Semantic Relations?

- a) Meronymy
- b) Holonymy
- c) Hyponymy
- d) All of the mentioned

82. What is Meronymy?

- a) A is part of B
- b) B has A as a part of B
- c) A is a kind of B
- d) A is superordinate of B

83. What is the frame?

- a) A way of representing knowledge
- b) A way of representing data
- c) A way of representing information
- d) A way of representing facts

NEHRU COLLEGE OF ENGINEERING AND RESEARCH  
(NAAC Accredited)



(Approved by AICTE, Affiliated to University of Calicut and AI  
University)

84. Frames in artificial intelligence is derived from semantic networks.

- a) True
- b) False

85. Which of the following elements constitutes the frame structure?

- a) Facts or Data
- b) Procedures and default values
- c) Frame names
- d) Frame reference in hierarchy

86. Like semantic networks, frames can be queried.

- a) True
- b) False

87. In LISP, the function returns true if the number is even.

- a) (evenp <integer>)
- b) (even <integer>)
- c) (numeven <integer>)
- d) (numnevenp <integer>)

88. Which of the following is an advantage of frames?

- a) imposed structure
- b) knowledge engineering assistance
- c) rapid prototyping
- d) all of the mentioned

89. An AI system developed by the University of Illinois is

- a) SHRDLU
- b) SIMD
- c) BACON
- d) STUDENT

90. The following is not a characteristic of the algorithmic approach.

- a) binary
- b) elementary
- c) recursive
- d) sequential



NEHRU COLLEGE OF ENGINEERING  
(NAAC ACCREDITED)

(Approved by AICTE, Affiliated to University of Mumbai)

- c) parallel processing
- d) all of the mentioned

92. The first widely-used commercial logic family was TTL. It is used in many popular products like microwave ovens, washing machines, and desktop PCs. It allows machines to handle tasks that require human intuition. What is the name of this logic?

- a) Boolean logic
- b) Human logic
- c) Fuzzy logic
- d) Functional logic

93. In his landmark book Cybernetics, Norbert Wiener introduced the concept of scientific phenomena using not energy but information.

- a) mathematics
- b) intelligence
- c) information
- d) history

94. Which condition is used to determine if a sentence is atomic?

- a) Atomic sentences
- b) Complex sentences
- c) No further inference
- d) All of the mentioned

95. Which closely related to inference?

- a) Resolution
- b) Inference
- c) Conjunction
- d) First-order logic

96. What is the name of the logic that is used to represent the existence of an object?

- a) Existential logic
- b) Universal logic
- c) Both Existential and Universal logic
- d) None of the above

97. Which are the two main types of logic?

- a) Propositional logic
- b) Predicate logic



**NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)**

(Approved by AICTE. Affiliated to University of Calicut and APJ Abdul Kalam Technological University)

98. Though local search algorithms are not systematic, key advantages with respect to global search algorithms are

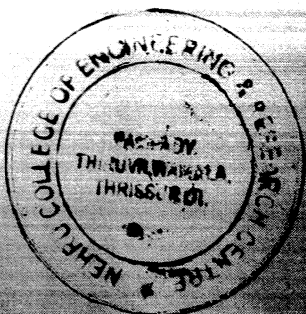
- a) Less memory
- b) More time
- c) Finds a solution in large infinite space
- d) Less memory & Finds a solution in large infinite space

99. A complete, local search algorithm always finds goal if one exists. A hill climbing algorithm always finds a global minimum/maximum.

- a) True
- b) False

100. \_\_\_\_\_ Is an algorithm, a loop that continually moves in the direction of increasing value – that is uphill.

- a) Up-Hill Search
- b) Hill-Climbing
- c) Hill algorithm
- d) Reverse-Down-Hill search





**NEHRU COLLEGE OF ENGINEERING AND RESEARCH**  
**(NAAC Accredited)**

(Approved by AICTE, Affiliated to University of Calicut and APJ Abdul Kalam Technological University)

1. In LISP, the function returns the list that results after the first element is removed from the list, is \_\_\_\_\_

- a) car
- b) last
- c) cons
- d) cdr

2. Which of the following contains the output segments of Artificial Intelligence programming?

- a) Printed language and synthesized speech
- b) Manipulation of physical object
- c) Locomotion
- d) All of the mentioned

3. LISP was created by?

- a) John McCarthy
- b) Marvin Minsky
- c) Alan Turing
- d) Allen Newell and Herbert Simon

4. Expert Ease was developed under the direction of \_\_\_\_\_

- a) John McCarthy
- b) Donald Michie
- c) Lofti Zadeh
- d) Alan Turing

5. An Artificial Intelligence system developed by Ed Feigenbaum that simulates a dialogue about a domain he called \_\_\_\_\_

- a) SHRDLU
- b) SIMD
- c) BACON
- d) STUDENT

6. MLMenu, a natural language menu system, was developed by \_\_\_\_\_

- a) Ethernet
- b) NaturalLink
- c) PROLOG
- d) The Personal Computer

7. Strong Artificial Intelligence is \_\_\_\_\_





NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)

(Approved by AICTE, Affiliated to University of Calicut and APJ Abdul Kalam Technological University)

- b) a set of computer programs that produce output that would be considered to reflect intelligence if it were generated by humans
- c) the study of mental faculties through the use of mental models implemented on a computer
- d) all of the mentioned

8. The traditional way to exit and LISP system is to enter \_\_\_\_\_

- a) quit
- b) exit
- c) bye
- d) ok

9. In which of the following situations might a blind search be acceptable?

- a) real-life situation
- b) complex game
- c) small search space
- d) all of the mentioned

10. What is Artificial intelligence?

- a) Putting your intelligence into Computer
- b) Programming with your own intelligence
- c) Making a Machine intelligent
- d) Playing a Game

11. Which search method takes less memory?

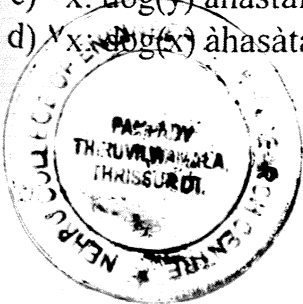
- a) Depth-First Search
- b) Breadth-First search
- c) Optimal search
- d) Linear Search

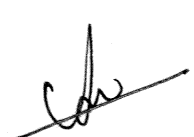
12. A heuristic is a way of trying \_\_\_\_\_

- a) To discover something or an idea embedded in a program
- b) To search and measure how far a node in a search tree seems to be from a goal
- c) To compare two nodes in a search tree to see if one is better than the other is
- d) All of the mentioned

13. How do you represent "All dogs have tails"?

- a)  $\forall x: \text{dog}(x) \rightarrow \text{tail}(x)$
- b)  $\forall x: \text{dog}(x) \rightarrow \text{tail}(y)$
- c)  $\forall x: \text{dog}(y) \rightarrow \text{tail}(x)$
- d)  $\forall x: \text{dog}(x) \rightarrow \text{tail}(x)$



  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thirissur Dt  
Pin 680 597 Kerala



NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)

(Approved by AICTE, Affiliated to University of Calicut and APJ Abdul Kalam Technological University)

14. Which is not a property of representation of knowledge?
- a) Representational Verification
  - b) Representational Adequacy
  - c) Inferential Adequacy
  - d) Inferential Efficiency
15. What was originally called the "imitation game" by its creator?
- a) The Turing Test
  - b) LISP
  - c) The Logic Theorist
  - d) Cybernetics
16. An expert system differs from a database program in that only an expert system
- a) contains declarative knowledge
  - b) contains procedural knowledge
  - c) features the retrieval of stored information
  - d) expects users to draw their own conclusions
17. Natural language understanding is used in
- a) natural language interfaces
  - b) natural language front ends
  - c) text understanding systems
  - d) all of the mentioned
18. Which is the first AI programming language?
- a) BASIC
  - b) FORTRAN
  - c) IPL (Inductive logic programming)
  - d) LISP
19. What is the main task of a problem solver?
- a) Solve the given problem and return the solution
  - b) To find out which sequence of actions will solve the problem
  - c) All of the mentioned
  - d) None of the mentioned
20. What is state space?
- a) The whole problem
  - b) Your domain
  - c) Problem
  - d) None of the mentioned



NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)

(Approved by AICTE, Affiliated to University of Calicut and APJ Abdul Kalam Technological University)

Since 1966

21. The problem-solving agent with several immediate options of unknown value can decide what to do by just examining different possible sequences of actions that lead to states of known value, and then choosing the best sequence. This process of looking for such a sequence is called Search.

- a) True
- b) False

22. A search algorithm takes \_\_\_\_\_ as an input and returns \_\_\_\_\_ as an output.

- a) Input, output
- b) Problem, solution
- c) Solution, problem
- d) Parameters, sequence of actions

23. A problem in a search space is defined by one of these state.

- a) Initial state
- b) Last state
- c) Intermediate state
- d) All of the mentioned

24. The Set of actions for a problem in a state space is formulated by a \_\_\_\_\_

- a) Intermediate states
- b) Initial state
- c) Successor function, which takes current action and returns next immediate state
- d) None of the mentioned

25. A solution to a problem is a path from the initial state to a goal state. Solution quality is measured by the path cost function, and an optimal solution has the highest path cost among all solutions.

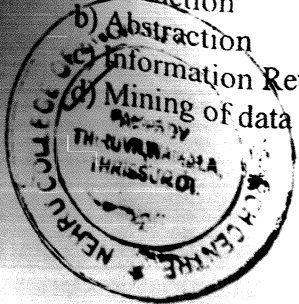
- a) True
- b) False

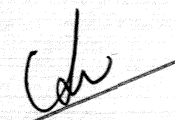
26. The process of removing detail from a given state representation is called \_\_\_\_\_

- a) Extraction
- b) Abstraction
- c) Information Retrieval
- d) Mining of data

27. The process of removing detail from a given state representation is called \_\_\_\_\_

- a) Extraction
- b) Abstraction
- c) Information Retrieval
- d) Mining of data



  
**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala, Thirissur Dt  
Pin 680 597 Kerala



NEHRU COLLEGE OF ENGINEERING AND TECHNOLOGY  
(NAAC Accredited)

(Approved by AICTE, Affiliated to University of Mumbai, Maharashtra  
University)

28. The \_\_\_\_\_ is a touring problem in which the main aim is to find the shortest tour.
- a) Finding shortest path between a source and goal in a graph
  - b) Travelling Salesman problem
  - c) Map coloring problem
  - d) Depth first search traversal on a given graph
29. Web Crawler is a/an \_\_\_\_\_
- a) Intelligent goal-based agent
  - b) Problem-solving agent
  - c) Simple reflex agent
  - d) Model based agent
30. What is the major component of an AI problem solving?
- a) Completeness
  - b) Optimality
  - c) Time and Space complexity
  - d) All of the mentioned
31. A problem is said to be \_\_\_\_\_
- a) A set of rules
  - b) A semantic network
  - c) Search tree
  - d) All of the mentioned



NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)

(Approved by AICTE, Affiliated to University of Calicut and APJ Abdul Kalam Technological University)

35. How many types are available in uninformed search method?

- a) 3
- b) 4
- c) 5
- d) 6

36. Which search is implemented with an empty first-in-first-out queue?

- a) Depth-first search
- b) Breadth-first search
- c) Bidirectional search
- d) None of the mentioned

37. When is breadth-first search is optimal?

- a) When there is less number of nodes
- b) When all step costs are equal
- c) When all step costs are unequal
- d) None of the mentioned

38. How many successors are generated in backtracking search?

- a) 1
- b) 2
- c) 3
- d) 4

39. What is the space complexity of Depth-first search?

- a)  $O(b)$
- b)  $O(bl)$
- c)  $O(m)$
- d)  $O(bm)$

40. How many parts does a problem consists of?

- a) 1
- b) 2
- c) 3
- d) 4

41. Which algorithm is used to solve any kind of problem?

- a) Breadth-first algorithm
- b) Tree algorithm
- c) Bidirectional search algorithm
- d) None of the mentioned

42. Which search algorithm is used to solve a problem?

- a) Depth limited search



NEHRU COLLEGE OF ENGINEERING AND RESEARCH  
(NAAC Accredited)

(Approved by AICTE, Affiliated to University of Calicut and APJ Abdul Kalam Technological University)

- b) Depth-first search
- c) Iterative deepening search
- d) Bidirectional search

43. Which search implements stack operation for searching the solution?

- a) Depth-limited search
- b) Depth-first search
- c) Breadth-first search
- d) None of the mentioned

44. \_\_\_\_\_ are mathematical problems which must satisfy a number of constraints or limitations.

- a) Constraints Satisfaction Problems
- b) Uninformed Search Problems
- c) Local Search Problems
- d) All of the mentioned

45. Which of the Following problems can be modeled as CSP?

- a) 8-Puzzle problem
- b) 8-Queen problem
- c) Map coloring problem
- d) All of the mentioned

46. What among the following constitutes to the cost function?

- a) Path cost
- b) Goal cost
- c) Successor function
- d) All of the mentioned

47. The term \_\_\_\_\_ is used to denote

variable at a time and return to the previous state.

- a) Forward search
- b) Backtrack search
- c) Hill algorithm
- d) Reverse-Down-Hill search

48. To overcome the need for

by

- a) Forward Searching
- b) Constraint Propagation
- c) Backtracking
- d) None of the mentioned



NEHRU COLLEGE OF ENGINEERING AND RESEARCH  
(NAAC Accredited)

(Approved by AICTE, Affiliated to University of Calicut and APJ Abdul Kalam  
University)

49. The BACKTRACKING-SEARCH algorithm in Figure 5.3 has what to do when a branch of the search fails: back up to the previous value for it. This is called chronological-backtracking. It is a way to set of variable that caused failure.

- a) True
- b) False

50. Consider a problem of preparing a schedule for a class of students. This is this?

- a) Search Problem
- b) Backtrack Problem
- c) CSP
- d) Planning Problem

51. Constraint satisfaction problems on finite domains are typically solved by

- a) Search Algorithms
- b) Heuristic Search Algorithms
- c) Greedy Search Algorithms
- d) All of the mentioned

52. Solving a constraint satisfaction problem on a finite domain is NP-complete with respect to the domain size.

- a) P complete
- b) NP complete
- c) NP hard
- d) Domain dependent

53. \_\_\_\_\_ is/are useful when the constraints are static. This is done in one way, typically because the set of constraints does not change.

- a) Static CSPs
- b) Dynamic CSPs
- c) Flexible CSPs
- d) None of the mentioned

54. Flexible CSPs relate to

- a) Constraints
- b) Current State
- c) Initial State
- d) Goal State

55. Language of CSP is



NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)

(Approved by AICTE, Affiliated to University of Calicut and APJ Abdul Kalam Technological University)

- b) C#
- c) C
- d) Fortran

56. Backtracking is based on \_\_\_\_\_

- a) Last in first out
- b) First in first out
- c) Recursion
- d) Both Last in first out & Recursion

57. Constraint Propagation technique actually modifies the search space.

- a) True
- b) False

58. When do we call the states are safely explored?

- a) A goal state is unreachable from any state
- b) A goal state is denied access
- c) A goal state is reachable from every state
- d) None of the mentioned

59. Which of the following algorithm is greedy among the following algorithms?

- a) Breadth-first search algorithm
- b) Depth-first search algorithm
- c) Hill-climbing search algorithm
- d) None of the mentioned

60. General games involves \_\_\_\_\_

- a) Single-agent
- b) Multi-agent
- c) Neither Single-agent nor Multi-agent
- d) Only Single-agent and/or Multi-agent

61. Adversarial search problems are \_\_\_\_\_

- a) Competitive environment
- b) Cooperative environment
- c) Neither Cooperative nor Competitive environment
- d) Only Cooperative environment

62. Minimax algorithm is used for \_\_\_\_\_

- a) game tree search in a two player zero-sum game, regardless of the branching factor.



NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTER  
(NAAC Accredited)

(Approved by AICTE, Affiliated to University of Calicut and APJ Abdul Kalam Technological University)

63. Zero sum games are the one in which there are two agents whose actions influence the utility values at the end of the game and in which the utility values at the end of the game are always the same.

- a) True
- b) False

64. Zero sum game has to be a \_\_\_\_\_ game.

- a) Single player
- b) Two player
- c) Multiplayer
- d) Three player

65. A game can be formally defined as a kind of search problem with the following components.

- a) Initial State
- b) Successor Function
- c) Terminal Test
- d) All of the mentioned

66. The initial state and the legal moves for each side define the

- a) Search Tree
- b) Game Tree
- c) State Space Search
- d) Forest

67. General algorithm applied on game tree for making decisions is

- a) DFS/BFS Search Algorithms
- b) Heuristic Search Algorithms
- c) Greedy Search Algorithms
- d) MIN/MAX Algorithms

68. The minimax algorithm computes the value of the root node by a simple recursive computation of the values of the nodes. It implements the defining equations of the minimax algorithm by traversing the tree, and then the minimax value is computed. The process unwinds.

- a) True
- b) False

69. What is the complexity of minimax algorithm?

- a) Same as of DFS
- b) Space  $O(bm)$  and time  $O(b^m)$
- c) Time  $O(bm)$  and space  $O(b)$
- d) Same as of BFS



**NEHRU COLLEGE OF ENGINEERING AND RESEARCH**  
(NAAC Accredited)

(Approved by AICTE, Affiliated to University of Calicut and APJ Abdul Kalam  
University)

70. Knowledge and reasoning also play a crucial role in dealing with a dynamic environment.

- a) Completely Observable
- b) Partially Observable
- c) Neither Completely nor Partially Observable
- d) Only Completely and Partially Observable

71. Treatment chosen by doctor for a patient for a disease is

- a) Only current symptoms
- b) Current symptoms plus some knowledge from the past
- c) Current symptoms plus some knowledge from the future
- d) All of the mentioned

72. A knowledge-based agent can combine general information with specific information to reveal hidden aspects of the current state prior to selecting an action.

- a) True
- b) False

73. A) Knowledge base (KB) is empty.  
B) KB contains a sentence from the KB.

Choose the correct option.

- a) A is true, B is true
- b) A is false, B is false
- c) A is true, B is false
- d) A is false, B is true

74. Wumpus World is

- a) Single player Game
- b) Two player Game
- c) Reasoning Game
- d) Knowledge Game



**NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE**  
(NAAC Accredited)

(Approved by AICTE. Affiliated to University of Calicut and APJ Abdul Kalam Technological University)

77. Where does the values of alpha-beta search get updated?

- a) Along the path of search
- b) Initial state itself
- c) At the end
- d) None of the mentioned

78. How the effectiveness of the alpha-beta pruning gets increased?

- a) Depends on the nodes
- b) Depends on the order in which they are executed
- c) All of the mentioned
- d) None of the mentioned

79. What are Semantic Networks?

- a) A way of representing knowledge
- b) Data Structure
- c) Data Type
- d) None of the mentioned

80. Graph used to represent semantic network is \_\_\_\_\_

- a) Undirected graph
- b) Directed graph
- c) Directed Acyclic graph (DAG)
- d) Directed complete graph

81. Which of the following are the Semantic Relations used in NLP?

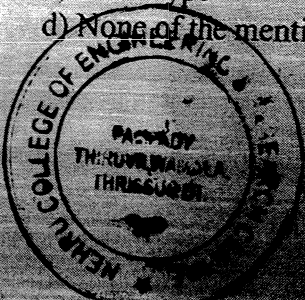
- a) Meronymy
- b) Holonymy
- c) Hyponymy
- d) All of the mentioned

82. What is Meronymy relation?

- a) A is part of B
- b) B has A as a part of itself
- c) A is a kind of B
- d) A is superordinate of B

83. What is the frame?

- a) A way of representing knowledge
- b) Data Structure
- c) Data Type
- d) None of the mentioned





NEHRU COLLEGE OF ENGINEERING AND RESEARCH  
(NAAC Accredited)

(Approved by AICTE, Affiliated to University of Calicut,  
University)

84. Frames in artificial intelligence is derived from semantic networks.

- a) True
- b) False

85. Which of the following elements constitutes the frame structure?

- a) Facts or Data
- b) Procedures and default values
- c) Frame names
- d) Frame reference in hierarchy

86. Like semantic networks, frames can be queried.

- a) True
- b) False

87. In LISP, the function returns t if <integer> is even.

- a) (evenp <integer>)
- b) (even <integer>)
- c) (numeven <integer>)
- d) (numnevenp <integer>)

88. Which of the following is an advantage of expert shells?

- a) imposed structure
- b) knowledge engineering assistance
- c) rapid prototyping
- d) all of the mentioned

89. An AI system developed by Ed Feigenbaum is

- a) SHRDLU
- b) SIMD
- c) BACON
- d) STUDENT

90. The Turing machine is an algorithmic model of

- a) binary computation
- b) electronic computation
- c) recursive computation
- d) semantic computation

91. The Turing machine is an algorithmic model of

- a) binary computation



**NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE**  
(NAAC Accredited)

(Approved by AICTE, Affiliated to University of Calicut and APJ Abdul Kalam Technological University)

- c) parallel processing
- d) all of the mentioned

92. The first widely-used commercial form of Artificial Intelligence (AI) is being used in many popular products like microwave ovens, automobiles and plug in circuit boards of desktop PCs. It allows machines to handle vague information with a deftness that mimics human intuition. What is the name of this Artificial Intelligence?

- a) Boolean logic
- b) Human logic
- c) Fuzzy logic
- d) Functional logic

93. In his landmark book Cybernetics, Norbert Wiener suggested a way of modeling scientific phenomena using not energy, but \_\_\_\_\_

- a) mathematics
- b) intelligence
- c) information
- d) history

94. Which condition is used to cease the growth of forward chaining?

- a) Atomic sentences
- b) Complex sentences
- c) No further inference
- d) All of the mentioned

95. Which closely resembles propositional definite clause?

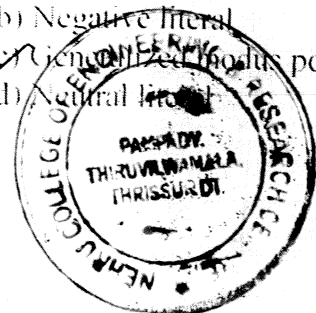
- a) Resolution
- b) Inference
- c) Conjunction
- d) First-order definite clauses

96. What is the condition of variables in first-order literals?

- a) Existentially quantified
- b) Universally quantified
- c) Both Existentially & Universally quantified
- d) None of the mentioned

97. Which are more suitable normal form to be used with definite clause?

- a) Positive literal
- b) Negative literal
- c) Generalized Horn clauses
- d) Neutral literal



**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Pamapady, Thiruvilwamala, Thrissur Dt  
Pm 680 597 Kerala



NEHRU COLLEGE OF ENGINEERING  
(NAAC ACCREDITED)

(Approved by AICTE, Affiliated to University of  
University of

98. Though local search algorithms are not systematic

- a) Less memory
- b) More time
- c) Finds a solution in large infinite spaces
- d) Less memory & Finds a solution in large infinite spaces

99. A complete, local search algorithm always finds a global minimum/maximum

- a) True
- b) False

100. \_\_\_\_\_ Is an algorithm which always finds a local maximum/minimum increasing value – that is uphill

- a) Up-Hill Search
- b) Hill-Climbing
- c) Hill algorithm
- d) Reverse-Down-Hill search





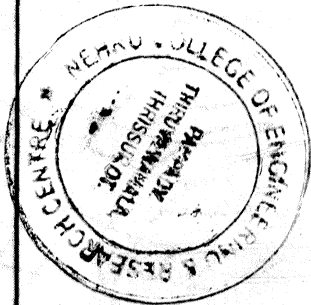
# Certificate

OF COMPLETION

PROUDLY PRESENTED TO

Aswanth K V

For his/her Successful Completion on **ARTIFICIAL INTELLIGENCE** by,  
Department of Computer Science and Engineering, **Nehru College  
of Engineering and Research Centre, Pampady.**



  
PROGRAM  
CO-ORDINATOR

  
HEAD OF  
DEPARTMENT

  
PRINCIPAL

Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thiruvananthapuram

Pin - 686 597 Kerala



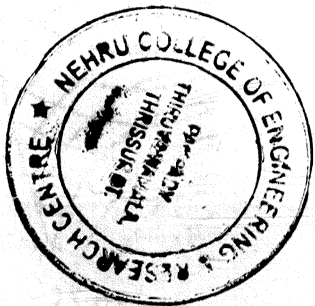
# Certificate

OF COMPLETION

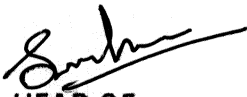
PROUDLY PRESENTED TO

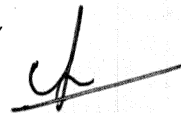
**Dhanesh K R**

For his/her Successful Completion on **ARTIFICIAL INTELLIGENCE** by,  
Department of Computer Science and Engineering, **Nehru College  
of Engineering and Research Centre, Pampady.**



  
PROGRAM  
CO-ORDINATOR

  
HEAD OF  
DEPARTMENT

  
PRINCIPAL

Nehru College of  
Engineering and Research Centre  
Thiruvilwamala, Thiruvananthapuram  
Pampady - 680 597 Kerala



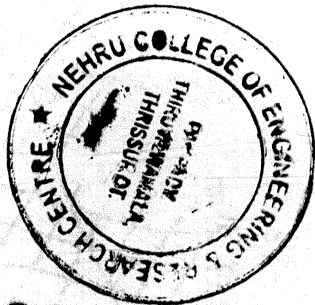
# Certificate

OF COMPLETION

PROUDLY PRESENTED TO

Girish C

For his/her Successful Completion on **ARTIFICIAL INTELLIGENCE** by,  
Department of Computer Science and Engineering, **Nehru College  
of Engineering and Research Centre, Pampady.**



*[Signature]*  
PROGRAM  
CO-ORDINATOR

*[Signature]*  
HEAD OF  
DEPARTMENT

*[Signature]*  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thirissur Dt  
Pin 680 597 Kerala



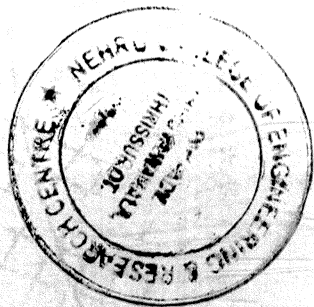
# Certificate

OF COMPLETION

PROUDLY PRESENTED TO

**Indu K S**

For his/her Successful Completion on **ARTIFICIAL INTELLIGENCE** by,  
Department of Computer Science and Engineering, **Nehru College  
of Engineering and Research Centre, Pampady.**



*[Signature]*

PROGRAM  
CO-ORDINATOR

*[Signature]*

HEAD OF  
DEPARTMENT

*[Signature]*

PRINCIPAL  
Nehru College of

Engineering and Research Centre

Pin 680 597 Kerala



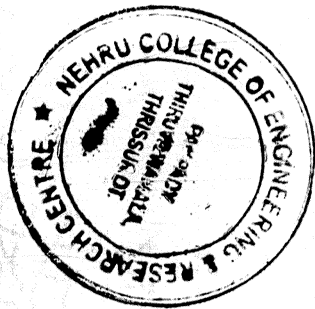
# Certificate

OF COMPLETION


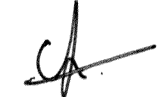
PROUDLY PRESENTED TO

Liyas Thomas

For his/her Successful Completion on **ARTIFICIAL INTELLIGENCE** by,  
Department of Computer Science and Engineering, **Nehru College**  
of Engineering and Research Centre, Pampady.



  
PROGRAM  
CO-ORDINATOR

  
HEAD OF  
DEPARTMENT  
  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre

Pampady, Thiruvithamala, Thrissur District



**NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)**

(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)

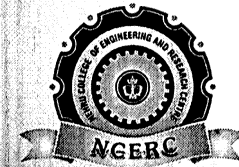


# **Electrical and Electronics Engineering**



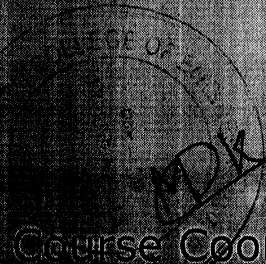
# NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE


(Approved by AICTE, Affiliated to Calicut University and A P J  
Abdul Kalam Technological University, Kerala)





This is to Certify that Ms. SWAYANA SELVAN of Electrical  
and Electronics Engineering Department has successfully completed  
the Certificate/Addon Course on EV(FUTURE MOBILITY)

from 05/07/2014 to 25/09/2014 at Nehru College of Engineering &  
Research Centre, Pamapdy.

  
Course Coordinator

  
HoD  
EEE Department

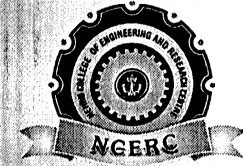
  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thrissur Dt.  
Pin - 680 507, Kerala  
  
Principal  
NCERC



# NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE

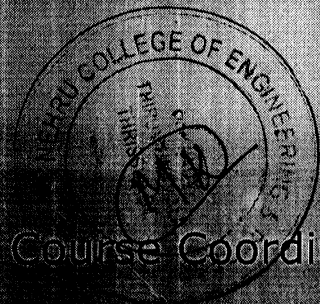
(Approved by AICTE, Affiliated to Calicut University and A P J

Abdul Kalam Technological University, Kerala)



This is to Certify that Mr.AKHIL ANAND of Electrical and Electronics Engineering Department has successfully completed the Certificate/Addon Course on EV(FUTURE MOBILITY)

from 05/07/2014 to 25/09/2014 at Nehru College of Engineering & Research Centre, Pamapdy.



Course Coordinator

HoD  
EEE Department

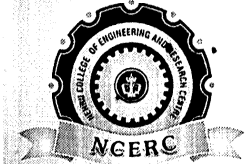
Principal  
NCERC



# NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE

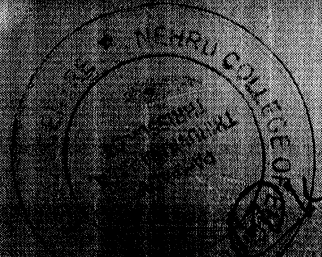
(Approved by AICTE, Affiliated to Calicut University and A P J

Abdul Kalam Technological University, Kerala)



This is to Certify that Ms.AMRUTHA V P of Electrical and Electronics Engineering Department has successfully completed the Certificate/Addon Course on EV(FUTURE MOBILITY)

from 05/07/2014 to 25/09/2014 at Nehru College of Engineering & Research Centre, Pamapdy.



Course Coordinator

HoD

EEE Department

PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pamapdy, Thiruvananthapuram, Kerala

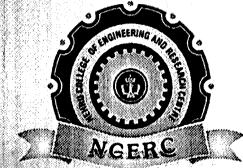
Principal  
NCERC



# NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE

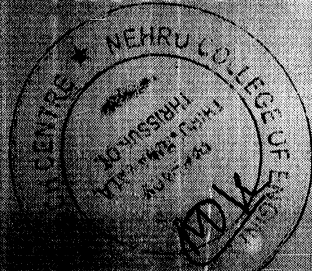
(Approved by AICTE, Affiliated to Calicut University and A P J

Abdul Kalam Technological University, Kerala)



This is to Certify that Mr. ANILIN R of Electrical and Electronics Engineering Department has successfully completed the Certificate/Addon Course on EV(FUTURE MOBILITY)

from 05/07/2014 to 25/09/2014 at Nehru College of Engineering & Research Centre, Pamapdy.



Course Coordinator

HoD  
EEE Department

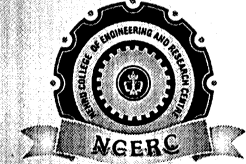
Principal  
NCERC



# NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE

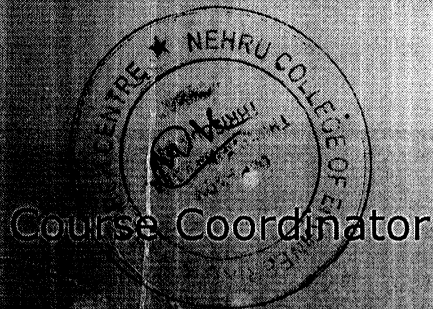
(Approved by AICTE, Affiliated to Calicut University and A P J

Abdul Kalam Technological University, Kerala)



This is to Certify that Mr.KIRAN K KANNAN of Electrical and Electronics Engineering Department has successfully completed the Certificate/Addon Course on EV(FUTURE MOBILITY)

from 05/07/2014 to 25/09/2014 at Nehru College of Engineering & Research Centre, Pamapdy.



Course Coordinator

HoD

EEE Department

PRINCIPAL

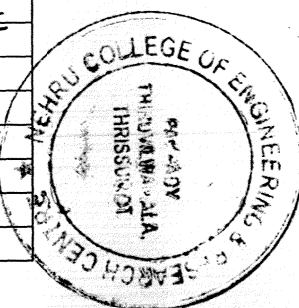
Nehru College of  
Engineering and Research Centre,  
Pamapdy, Thiruvananthapuram, Kerala  
Pin - 680 667

Principal  
NCERC

NEHRU COLLEGE OF ENGINEERING & RESEARCH CENTRE

Pampady, Thiruvilwamala, Thrissur Dt.  
Performance Sheet for Certificate Course on "ELECTRICAL VEHICLE(FUTURE MOBILITY)"  
Electrical & Electronics Engineering(UG)- (2013-17)  
PERFORMANCE ANALYSIS


Reg.No.	Student Name	Marks/30
NCANEEE001	ABHIRAMI A.S	26
NCANEEE002	AISWARYA U	26
NCANEEE003	AISWARYA K P	28
NCANEEE004	AISWARYA M S	25
NCANEEE005	AJAY B	25
NCANEEE006	AJI GOPAL V	27
NCANEEE007	AJNA K I	28
NCANEEE008	AKARSH S	27
NCANEEE009	AKHIL ANAND	26
NCANEEE010	AKSHAY A	26
NCANEEE011	AKSHAY KUMAR	26
NCANEEE012	AKSHAY SATHIAN K	25
NCANEEE013	AMRITHA A B	25
NCANEEE014	AMRUTHA V.P	24
NCANEEE015	ANAGHA RADHAKRISHAN	28
NCANEEE016	ANANDRAJ K	-AB-
NCANEEE017	ANJITHA MENON K G	27
NCANEEE018	ANOOP MU	26
NCANEEE019	ARYA T MADHU	25
NCANEEE020	ASHFAQUE P SAIF	24
NCANEEE021	ASHROOF A	24
NCANEEE022	ASWATHY R	27
NCANEEE023	ASWIN M	26
NCANEEE024	ATHIRA RAJAN	28
NCANEEE025	ATHUL KRISHNAN B	27
NCANEEE026	ATHUL SURESH	26
NCANEEE027	AVANEED VISHNU	27
NCANEEE028	DIVYA V	26
NCANEEE029	FIROSE K	27
NCANEEE030	GOKUL DAS R	25
NCANEEE031	GOKUL K	25
NCANEEE032	HARIKRISHNAN K	26
NCANEEE033	HATHIM AHAMED A P	22
NCANEEE034	JACXYMOL JAMES	24
NCANEEE035	JICKSON SAJU	23
NCANEEE036	JIJITHA U	27
NCANEEE037	JINO GEORGE M	-AB-
NCANEEE038	JISHNU CHANDRAN	27
NCANEEE039	KAILAS A.P	28
NCANEEE040	ANILIN R	27
NCANEEE041	KIRAN K KANNAN	26
NCANEEE042	KUNISERRY CHEKINGAL VIPIN	22
NCANEEE043	LEDIYA JACOB	25
NCANEEE044	MADHUSOODANAN K	26
NCANEEE045	MANISH P	26
NCANEEE046	MINHAJ A S	25
NCANEEE047	MOHAMMED HAVAS V.A	26
NCANEEE048	NARENDRA PAI D	26
NCANEEE049	NAYANA M S	27

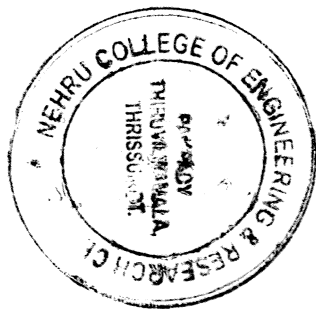



*[Signature]*  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thrissur Dt.  
Pin - 686 597 Kerala

Reg.No.	Student Name	Marks/30
NCANEEE050	NIKHIL KUMAR V	24
NCANEEE051	NOUSHIYA A	26
NCANEEE052	PRAVEEN K RAVINDRAN	26
NCANEEE053	RAHUL MOHAN	23
NCANEEE054	ROSHAN R	22
NCANEEE055	RUKHIYA FAHMIDHA	25
NCANEEE056	SALMAN P M	25
NCANEEE057	SANDESH VARMA E	25
NCANEEE058	SANJAY LAKSHMAN A	26
NCANEEE059	SARATH S	25
NCANEEE060	SARATH SASIDHARAN	27
NCANEEE061	SARATH SASIKUMAR	26
NCANEEE062	SHOBITH P	26
NCANEEE063	SIBIN C	25
NCANEEE064	SIDDHARTH KP	25
NCANEEE065	SONA JOHNSON	24
NCANEEE066	SOORAJ S	27
NCANEEE067	SOUGANDH K	26
NCANEEE068	SRINIDHI K.V	26
NCANEEE069	SUHAIL P P	24
NCANEEE070	SUKANNYA K S	24
NCANEEE071	SUSRUTHA DEV P	24
NCANEEE072	SWAYANA SELVAN	28
NCANEEE073	T.SREELAKSHMI	26
NCANEEE074	V SREERAM	25
NCANEEE075	VEENA T	26
NCANEEE076	VISHNU KR	23
NCANEEE077	VISHNU V	21
NCANEEE078	VYSAK SATHYANATH	28
NCANEEE079	YADAV K.S	21
NCANEEE080	YAJIN RAJAN	25

  
Course Coordinator

  
HoD



  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Panpady Thiruvilwamala, Thiruvananthapuram  
Pin 680 597 Kerala



CERTIFICATION COURSE EXAM

CERTIFICATION COURSE NAME: Electric Vehicle (Future Mobility)

Time: 1 Hr

Marks: 30

27/30

Date: 27/9/14

Student Name: Nayana M.S

Reg. No.: NCANEE049

Department: Electrical And Electronics

1. A Electric vehicle equipped with push button start will enter the POWER ON mode, but will not enter the READY TO DRIVE mode. No diagnostic trouble codes (DTCs) are stored. This could be caused by:

- (A) The high voltage safety plug is removed.
- (B) a failed brake on/off switch.
- (C) an empty fuel tank.
- (D) A 12 V battery which is disconnected

2. An electric vehicle equipped with a separate pump driven inverter cooling system has a diagnostic trouble code (DTC) for inverter overheating. The coolant is at the "full" level in the inverter coolant reservoir tank.

Technician A says that a failed inverter coolant pump could be the cause.

Technician B says that insufficient coolant in the internal combustion engine (ICE) cooling system could be the cause.

Who is right?

- (A) A only
- (B) B only
- (C) Both A and B
- (D) Neither A nor B

3. A Type-1 hybrid vehicle will enter READY TO DRIVE (KOER) mode but will not crank the internal combustion engine (ICE). When the vehicle is pushed in NEUTRAL gear range, the engine spins. Which of these could be the cause?

- (A) A depleted high voltage battery
- (B) A seized MG2
- (C) A failed crankshaft position sensor
- (D) A seized planetary gear set

4. During deceleration, the arrows on the power flow display appear as shown. This indicates:

- (A) the engine is running with energy flowing to the drive wheels.
- (B) the engine is running and driving the motor/generator to recharge the battery pack.
- (C) energy from the battery pack and the engine are blended and flowing to the drive wheels.
- (D) energy from the drive wheels is being used to recharge the battery pack.

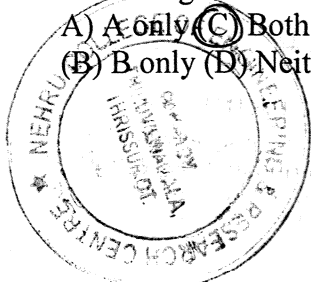
5. A Type-2 hybrid vehicle with a belt-type continuously variable transmission (CVT) bucks and jerks when accelerating from a stop.

Technician A says that using the wrong type of transmission fluid could be the cause.

Technician B says that a failing split pulley/steel belt could be the cause.

Who is right?

- (A) A only
- (B) B only
- (C) Both A and B
- (D) Neither A nor B





6. The MIL is illuminated and a "Battery Module Deterioration" diagnostic trouble code (DTC) is stored. The most likely cause is a failed:

- (A) high voltage battery.
- (B) high voltage inverter.
- (C) motor/generator.
- (D) DC/DC converter.

7. What purpose does a generator serve in a hybrid vehicle?

- It converts nuclear energy into more nuclear energy.
- It converts mechanical energy into electrical energy.
- It converts chemical energy into electrical energy.
- It converts electrical energy into mechanical energy.

8. What are the two main types of hybrid vehicle?

- The series hybrid vehicle and the mild hybrid vehicle.
- The parallel hybrid vehicle and the full hybrid vehicle.
- The series hybrid vehicle and the parallel hybrid vehicle.
- The full hybrid vehicle and the empty hybrid vehicle.

9. Which sentence best describes a parallel hybrid vehicle?

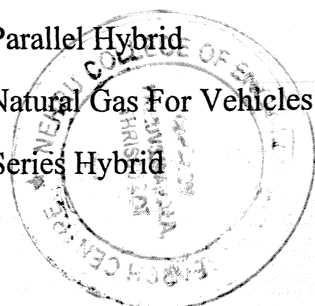
- The engine is directly connected to the transmission.
- The electric motor is directly connected to the transmission.
- Both of the above.
- None of the above.

10. Which of these is a purpose of the power-split device?

- To split electrical energy into mechanical energy.
- To allow both the engine and electric motor to propel the vehicle.
- To recharge the battery while braking.
- To recharge the brakes while driving.

11. which of the following is NOT the type of Hybrid Vehicle?

- a) Plug-in Hybrid
- b) Parallel Hybrid
- c) Natural Gas For Vehicles
- d) Series Hybrid





12. The Hybrid Electric Vehicle consists of :

- a) NGV engine + Gasoline engine
- b) IC engine + Gasoline engine
- c) Electric motor+ Electric motor ✓

d) IC engine+ Electric motor

13. "In this system, the engine is used to supply electrical power to the motor, which then turns the wheels" Select the type of Hybrid System according to above description.

a) Series Hybrid

b). Parallel Hybrid ✓

c). Plug-in Hybrid

d). Series-parallel Hybrid

14. "The wheels are driven by both the engine and the motor" Select the type of Hybrid System according to above description.

a). Series Hybrid

b). Parallel Hybrid

c). Plug-in Hybrid ✓

d) Series-parallel Hybrid

15. Select the features of Hybrid Electric Vehicles

a).Idle Stop

b).EV Drive ✓

c) Regenerative braking

d). All the above.

16. The electric motor in a hybrid car can also act as :

a).cooling fan

b). fuel pump ✓

c).generator

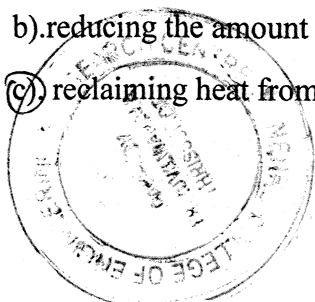
d). None of the above

17. Regenerative braking involves :

a). Nano fibers that repair the surface of brake pads

b).reducing the amount of friction necessary to slow a car

c) reclaiming heat from the brakes and using it for power ✓





NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)

(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)



18. The benefits of a hybrid car include :

- a) reducing emissions
- b) improving gas mileage
- c) high fuel consumption
- d) high speed driving

19. A \_\_\_\_\_ is a Hybrid source

- a) Mild Hybrid
- b) Full Hybrid
- c) Fuel Cell
- d) Assist Hybrid

20. A Toyota Prius C Hybrid has \_\_\_\_\_ engine.

- a) 1
- b) 2
- c) half
- d) no

21. Select the cycle use in a Hybrid Engine.

- a) Otto
- b) Diesel
- c) Atkinson
- d) Isentropic

22. Select the WRONG statement.

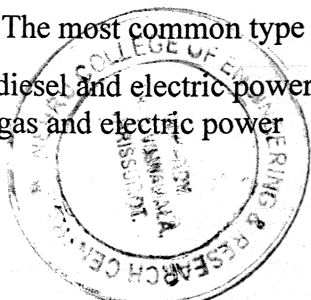
- a) Toyota produced the Insight Hybrid
- b) Hybrid systems rely on very high voltages
- c) All of the high voltage cables are covered in orange sleeves for easy identification
- d) To test high voltage systems you need a Category 3 (CAT III) digital volt ohmmeter

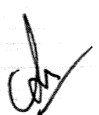
23. Select the CORRECT statement about Integrated Motor Assist (IMA) hybrid system

- a) Produced by Honda
- b) This system is the basis for many series parallel hybrid vehicles.
- c) This system is capable of instantaneously switching from one power source to another or combining the two.

24. The most common type of hybrid car combines the following:

- a) diesel and electric power
- b) gas and electric power



  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamulu  
Pin - 686 012



NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)

(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)



biodiesel and electric power

25. In a parallel hybrid:

- a). A gas engine runs an electric generator.
- b). A gas engine and electric motor can each turn the wheels.
- c). The engine has no connection to the transmissions

26. In a series hybrid:

- a). An electric motor acts as a backup to a gas engine.
- b). A gas engine and an electric motor alternately turn the wheels.
- c). A gas engine turns a generator, not the wheels.

27. Small engines are more efficient than large engines because:

- a). They weigh less.
- b). It takes less fuel to fill the cylinders.
- c). both A and B

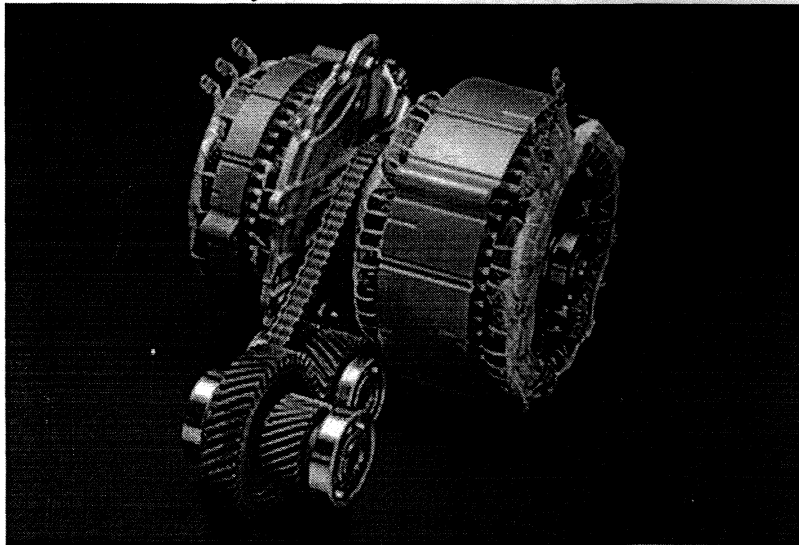
28. In a Prius, the power split device connects the:

- a). gasoline engine, generator and electric motor
- b). gasoline engine, electric motor and power train
- c). gasoline engine, transmission and brakes

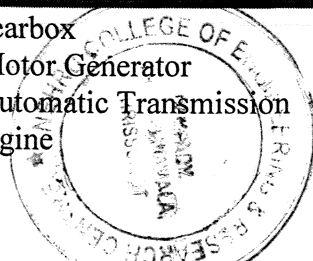
29. You should avoid abrupt stops in a hybrid car because:

- a). Hybrids are very sensitive to sudden changes in motion.
- b). The engine has more time to collect energy.
- c). Repairs to regenerative braking systems are extremely expensive.

30. This is the of Hybrid Electric Vehicles



- a). Gearbox
- b). Motor Generator
- c). Automatic Transmission
- d). Engine





CERTIFICATION COURSE EXAM

CERTIFICATION COURSE NAME: Electric Vehicle (Future Mobility)

Time: 1 Hr

Marks: 30

Date: 27/9/14

Student Name: KAILAS A.P

Reg. No.: NCANEEC 039

28/30

Department: Electrical And Electronics

1. A Electric vehicle equipped with push button start will enter the POWER ON mode, but will not enter the READY TO DRIVE mode. No diagnostic trouble codes (DTCs) are stored. This could be caused by:

- (A) The high voltage safety plug is removed.
- (B) a failed brake on/off switch.
- (C) an empty fuel tank.
- (D) A 12 V battery which is disconnected

2. An electric vehicle equipped with a separate pump driven inverter cooling system has a diagnostic trouble code (DTC) for inverter overheating. The coolant is at the "full" level in the inverter coolant reservoir tank.

Technician A says that a failed inverter coolant pump could be the cause.

Technician B says that insufficient coolant in the internal combustion engine (ICE) cooling system could be the cause.

Who is right?

- (A) A only
- (B) B only
- (C) Both A and B
- (D) Neither A nor B

3. A Type-1 hybrid vehicle will enter READY TO DRIVE (KOER) mode but will not crank the internal combustion engine (ICE). When the vehicle is pushed in NEUTRAL gear range, the engine spins. Which of these could be the cause?

- (A) A depleted high voltage battery
- (B) A seized MG2
- (C) A failed crankshaft position sensor
- (D) A seized planetary gear set

4. During deceleration, the arrows on the power flow display appear as shown. This indicates:

- (A) the engine is running with energy flowing to the drive wheels.
- (B) the engine is running and driving the motor/generator to recharge the battery pack.
- (C) energy from the battery pack and the engine are blended and flowing to the drive wheels.
- (D) energy from the drive wheels is being used to recharge the battery pack.

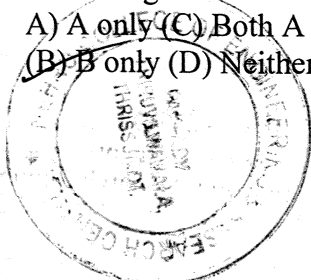
5. A Type-2 hybrid vehicle with a belt-type continuously variable transmission (CVT) bucks and jerks when accelerating from a stop.

Technician A says that using the wrong type of transmission fluid could be the cause.

Technician B says that a failing split pulley/steel belt could be the cause.

Who is right?

- A) A only (C) Both A and B
- (B) B only (D) Neither A nor B





NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)

(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)



6. The MIL is illuminated and a "Battery Module Deterioration" diagnostic trouble code (DTC) is stored. The most likely cause is a failed:

- (A) high voltage battery.
- (B) high voltage inverter.
- (C) motor/generator.
- (D) DC/DC converter.

7. What purpose does a generator serve in a hybrid vehicle?

- It converts nuclear energy into more nuclear energy.
- It converts mechanical energy into electrical energy.
- It converts chemical energy into electrical energy. ✓
- It converts electrical energy into mechanical energy.

8. What are the two main types of hybrid vehicle?

- The series hybrid vehicle and the mild hybrid vehicle. ✓
- The parallel hybrid vehicle and the full hybrid vehicle. ✓
- The series hybrid vehicle and the parallel hybrid vehicle.
- The full hybrid vehicle and the empty hybrid vehicle.

9. Which sentence best describes a parallel hybrid vehicle?

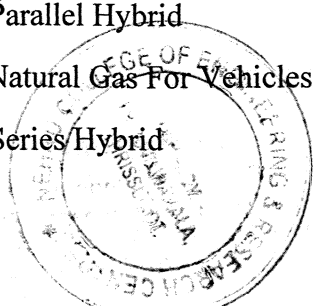
- The engine is directly connected to the transmission. ✓
- The electric motor is directly connected to the transmission.
- Both of the above.
- None of the above.

10. Which of these is a purpose of the power-split device?

- To split electrical energy into mechanical energy.
- To allow both the engine and electric motor to propel the vehicle. ✓
- To recharge the battery while braking.
- To recharge the brakes while driving.

11. which of the following is NOT the type of Hybrid Vehicle?

- a) Plug-in Hybrid
- b) Parallel Hybrid ✓
- c) Natural Gas For Vehicles
- d) Series Hybrid





12. The Hybrid Electric Vehicle consists of :

- a) NGV engine + Gasoline engine
- b) IC engine + Gasoline engine
- c) Electric motor+ Electric motor
- d) IC engine+ Electric motor ✓

13. "In this system, the engine is used to supply electrical power to the motor, which then turns the wheels" Select the type of Hybrid System according to above description.

- a) Series Hybrid
- b) Parallel Hybrid ✓
- c) Plug-in Hybrid
- d) Series-parallel Hybrid

14. "The wheels are driven by both the engine and the motor" Select the type of Hybrid System according to above description.

- a) Series Hybrid
- b) Parallel Hybrid
- c) Plug-in Hybrid ✓
- d) Series-parallel Hybrid

15. Select the features of Hybrid Electric Vehicles,

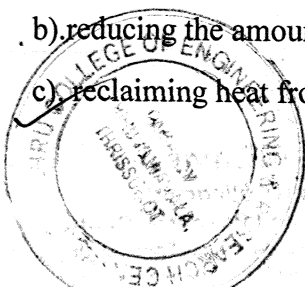
- a).Idle Stop
- b).EV Drive ✓
- c).Regenerative braking
- d). All the above.

16. The electric motor in a hybrid car can also act as :

- a).cooling fan
- b). fuel pump ✓
- c).generator
- d). None of the above

17. Regenerative braking involves :

- a). Nano fibers that repair the surface of brake pads
- b).reducing the amount of friction necessary to slow a car ✓
- c). reclaiming heat from the brakes and using it for power ✓





NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)

(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)



18. The benefits of a hybrid car include :

- a) ~~reducing emissions~~
- b). improving gas mileage
- c). high fuel consumption ✓
- d). high speed driving

19. A \_\_\_\_\_ is a Hybrid source

- a).Mild Hybrid
- b). Full Hybrid
- c). Fuel Cell ✓
- d). Assist Hybrid

20. A Toyota Prius C Hybrid has \_\_\_\_\_ engine.

- a). 1
- b). 2 ✓
- c). half
- d). no

21. Select the cycle use in a Hybrid Engine.

- a). Otto
- b).Diesel ✓
- c).Atkinson
- d). Isentropic

22. Select the WRONG statement.

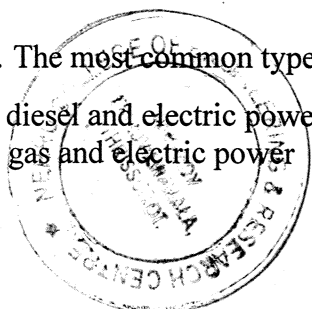
- a). Toyota produced the Insight Hybrid ✓
- b). Hybrid systems rely on very high voltages
- c). All of the high voltage cables are covered in orange sleeves for easy identification
- d). To test high voltage systems you need a Category 3 (CAT III) digital volt ohmmeter

23. Select the CORRECT statement about Integrated Motor Assist (IMA) hybrid system

- a). Produced by Honda ✓
- b). This system is the basis for many series parallel hybrid vehicles.
- c). This system is capable of instantaneously switching from one power source to another or combining the two.

24. The most common type of hybrid car combines the following:

- a). diesel and electric power
- b). gas and electric power ✓





**NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE**  
(NAAC Accredited)  
(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)



~~c). biodiesel and electric power~~ ✓

25. In a parallel hybrid:

- a). A gas engine runs an electric generator.
- ~~b). A gas engine and electric motor can each turn the wheels.~~ ✓
- c). The engine has no connection to the transmissions

26. In a series hybrid:

- ~~a). An electric motor acts as a backup to a gas engine.~~
- b). A gas engine and an electric motor alternately turn the wheels. ✓
- c). A gas engine turns a generator, not the wheels.

27. Small engines are more efficient than large engines because:

- ~~a). They weigh less.~~
- b). It takes less fuel to fill the cylinders. ✓
- c). both A and B

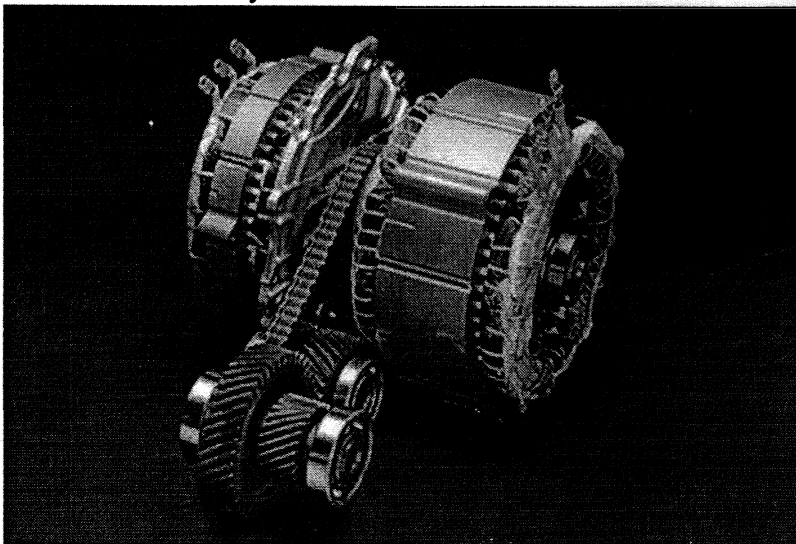
28. In a Prius, the power split device connects the:

- a). gasoline engine, generator and electric motor
- b). gasoline engine, electric motor and power train
- ~~c). gasoline engine, transmission and brakes~~ ✓

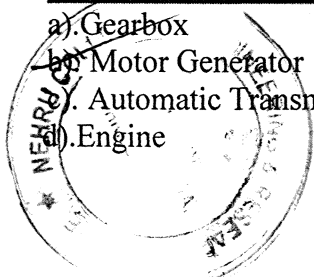
29. You should avoid abrupt stops in a hybrid car because:

- a). Hybrids are very sensitive to sudden changes in motion.
- b). The engine has more time to collect energy. ✓
- ~~c). Repairs to regenerative braking systems are extremely expensive.~~

30. This is the of Hybrid Electric Vehicles



- a). Gearbox
- ~~b). Motor Generator~~
- c). Automatic Transmission
- d). Engine



*[Handwritten Signature]*

PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala, Thrissur Dt /  
Pin - 680 597 Kerala



# NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE

(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)



## CERTIFICATION COURSE EXAM

CERTIFICATION COURSE NAME: Electric Vehicle (Future Mobility)

Time: 1 Hr

Marks: 30

Date: 27/9/14

Student Name: VYSAK SATHYANATH

Reg. No.: NCAJEE078

28/30

Department: Electrical And Electronics

1. A Electric vehicle equipped with push button start will enter the POWER ON mode, but will not enter the READY TO DRIVE mode. No diagnostic trouble codes (DTCs) are stored. This could be caused by:

- (A) The high voltage safety plug is removed.
- (B) a failed brake on/off switch.
- (C) an empty fuel tank.
- (D) A 12 V battery which is disconnected

2. An electric vehicle equipped with a separate pump driven inverter cooling system has a diagnostic trouble code (DTC) for inverter overheating. The coolant is at the "full" level in the inverter coolant reservoir tank.

Technician A says that a failed inverter coolant pump could be the cause.

Technician B says that insufficient coolant in the internal combustion engine (ICE) cooling system could be the cause.

Who is right?

- (A) A only
- (B) B only
- (C) Both A and B
- (D) Neither A nor B

3. A Type-1 hybrid vehicle will enter READY TO DRIVE (KOER) mode but will not crank the internal combustion engine (ICE). When the vehicle is pushed in NEUTRAL gear range, the engine spins. Which of these could be the cause?

- (A) A depleted high voltage battery
- (B) A seized MG2
- (C) A failed crankshaft position sensor
- (D) A seized planetary gear set

4. During deceleration, the arrows on the power flow display appear as shown. This indicates:

- (A) the engine is running with energy flowing to the drive wheels.
- (B) the engine is running and driving the motor/generator to recharge the battery pack.
- (C) energy from the battery pack and the engine are blended and flowing to the drive wheels.
- (D) energy from the drive wheels is being used to recharge the battery pack.

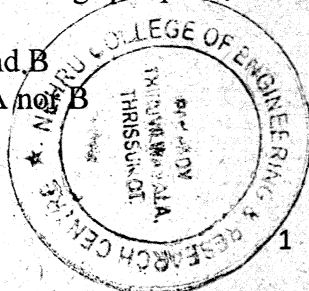
5. A Type-2 hybrid vehicle with a belt-type continuously variable transmission (CVT) bucks and jerks when accelerating from a stop.

Technician A says that using the wrong type of transmission fluid could be the cause.

Technician B says that a failing split pulley/steel belt could be the cause.

Who is right?

- (A) A only (C) Both A and B
- (B) B only (D) Neither A nor B



PRINCIPAL

Nehru College of  
Engineering and Research Centre  
Panpady, Thiruvilvamata, Thirissur Dt  
Pin - 686 597 Kerala



NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)

(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)



Since 1968

6. The MIL is illuminated and a "Battery Module Deterioration" diagnostic trouble code (DTC) is stored. The most likely cause is a failed:

- (A) high voltage battery.
- (B) high voltage inverter.
- (C) motor/generator.
- (D) DC/DC converter.

7. What purpose does a generator serve in a hybrid vehicle?

- It converts nuclear energy into more nuclear energy.
- It converts mechanical energy into electrical energy.
- It converts chemical energy into electrical energy.
- It converts electrical energy into mechanical energy.

8. What are the two main types of hybrid vehicle?

- The series hybrid vehicle and the mild hybrid vehicle.
- The parallel hybrid vehicle and the full hybrid vehicle.
- The series hybrid vehicle and the parallel hybrid vehicle.
- The full hybrid vehicle and the empty hybrid vehicle.

9. Which sentence best describes a parallel hybrid vehicle?

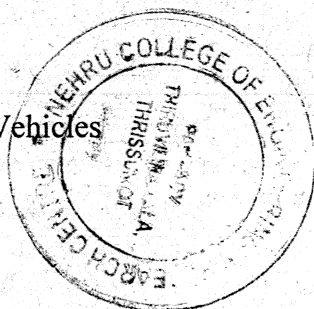
- The engine is directly connected to the transmission.
- The electric motor is directly connected to the transmission.
- Both of the above.
- None of the above.

10. Which of these is a purpose of the power-split device?

- To split electrical energy into mechanical energy.
- To allow both the engine and electric motor to propel the vehicle.
- To recharge the battery while braking.
- To recharge the brakes while driving.

11. Which of the following is NOT the type of Hybrid Vehicle?

- a) Plug-in Hybrid
- (b) Parallel Hybrid
- c) Natural Gas For Vehicles
- d) Series Hybrid





12. The Hybrid Electric Vehicle consists of :

- a) NGV engine + Gasoline engine
- b) IC engine + Gasoline engine
- c) Electric motor + Electric motor
- d) IC engine + Electric motor

13. "In this system, the engine is used to supply electrical power to the motor, which then turns the wheels" Select the type of Hybrid System according to above description.

- a). Series Hybrid
- b). Parallel Hybrid
- c). Plug-in Hybrid
- d). Series-parallel Hybrid

14. "The wheels are driven by both the engine and the motor" Select the type of Hybrid System according to above description.

- a). Series Hybrid
- b). Parallel Hybrid
- c). Plug-in Hybrid
- d). Series-parallel Hybrid

15. Select the features of Hybrid Electric Vehicles

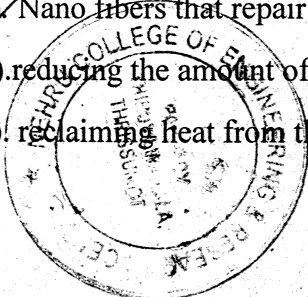
- a). Idle Stop
- b). EV Drive
- c). Regenerative braking
- d). All the above.

16. The electric motor in a hybrid car can also act as :

- a). cooling fan
- b). fuel pump
- c). generator
- d). None of the above

17. Regenerative braking involves :

- a). Nano fibers that repair the surface of brake pads
- b). reducing the amount of friction necessary to slow a car
- c). reclaiming heat from the brakes and using it for power





NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)

(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)



18. The benefits of a hybrid car include :

- a)  reducing emissions
- b)  improving gas mileage
- c)  high fuel consumption
- d)  high speed driving

19. A \_\_\_\_\_ is a Hybrid source

- a) Mild Hybrid
- b)  Full Hybrid
- c) Fuel Cell
- d) Assist Hybrid

20. A Toyota Prius C Hybrid has \_\_\_\_\_ engine.

- a)  1
- b)  2
- c)  half
- d)  no

21. Select the cycle use in a Hybrid Engine.

- a)  Otto
- b)  Diesel
- c)  Atkinson
- d)  Isentropic

22. Select the WRONG statement.

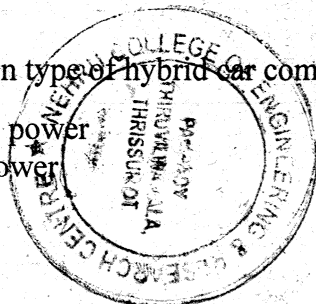
- a)  Toyota produced the Insight Hybrid
- b)  Hybrid systems rely on very high voltages
- c)  All of the high voltage cables are covered in orange sleeves for easy identification
- d)  To test high voltage systems you need a Category 3 (CAT III) digital volt ohmmeter

23. Select the CORRECT statement about Integrated Motor Assist (IMA) hybrid system

- a)  Produced by Honda
- b)  This system is the basis for many series parallel hybrid vehicles.
- c)  This system is capable of instantaneously switching from one power source to another or combining the two.

24. The most common type of hybrid car combines the following:

- a)  diesel and electric power
- b)  gas and electric power





NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)

(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)



c). biodiesel and electric power

25. In a parallel hybrid:

- a). A gas engine runs an electric generator.
- b). A gas engine and electric motor can each turn the wheels.
- c). The engine has no connection to the transmissions

26. In a series hybrid:

- a). An electric motor acts as a backup to a gas engine.
- b). A gas engine and an electric motor alternately turn the wheels.
- c). A gas engine turns a generator, not the wheels.

27. Small engines are more efficient than large engines because:

- a). They weigh less.
- b). It takes less fuel to fill the cylinders.
- c). both A and B

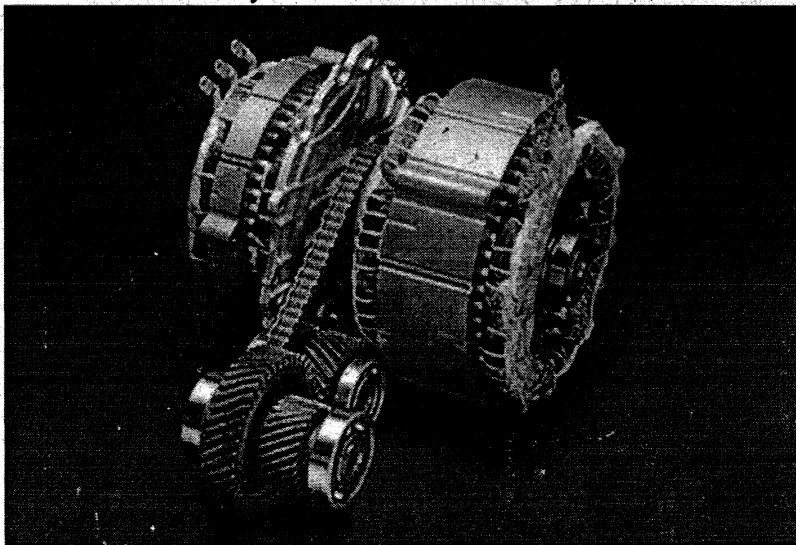
28. In a Prius, the power split device connects the:

- a). gasoline engine, generator and electric motor
- b). gasoline engine, electric motor and power train
- c). gasoline engine, transmission and brakes

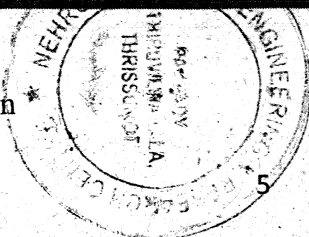
29. You should avoid abrupt stops in a hybrid car because:

- a). Hybrids are very sensitive to sudden changes in motion.
- b). The engine has more time to collect energy.
- c). Repairs to regenerative braking systems are extremely expensive.

30. This is the of Hybrid Electric Vehicles



- a). Gearbox
- b). Motor Generator
- c). Automatic Transmission



PRINCIPAL

Nehru College of  
Engineering and Research Centre  
Panpady Thiruvilvamala, Thiruvananthapuram  
Pin: 680 597 Kerala

NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE

PAMPADY, THIRUVILWAMALA, THRISSUR (DT) – 680 588

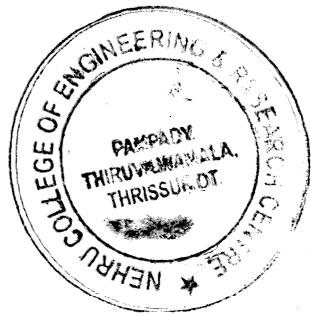
EV-FUTURE MOBILITY

ANSWER KEY

Question No.	Answer	Question No.	Answer
1	a	16	b
2	c	17	c
3	c	18	a
4	d	19	d
5	b	20	c
6	b	21	c
7	c	22	c
8	a	23	a
9	a	24	d
10	c	25	b
11	b	26	a
12	d	27	a
13	a	28	c
14	d	29	d
15	c	30	b

  
Course Coordinator

  
HoD



  
**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thrissur Dt  
Pin 680 597 Kerala

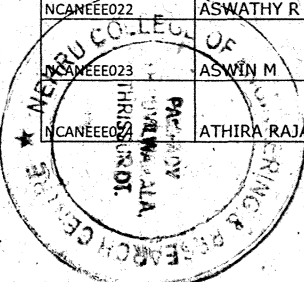
NEHRU COLLEGE OF ENGINEERING & RESEARCH CENTRE

Pampady, Thiruvilwamala, Thrissur Dt.

Attendance Sheet for Certificate Course on "ELECTRICAL VEHICLE(FUTURE MOBILITY)"

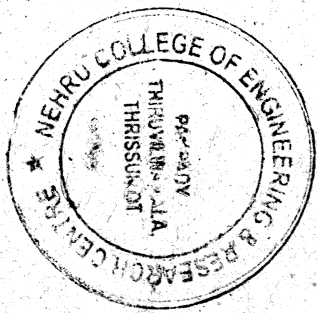
Electrical & Electronics Engineering(UG)- (2013-17)


Register Number	Student Name	28-06-2014		12-07-2014		26-07-2014		09-08-2014		23-08-2014		27-09-2014	
		FN	AN	FN	AN	FN	AN	FN	AN	FN	AN	FN	AN
NCANEEE001	ABHIRAMI A.S	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE002	AISWARYA U	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE003	AISWARYA K P	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE004	AISWARYA M S	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE005	AJAY B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE006	AJI GOPAL V	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE007	AJNA K I	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE008	AKARSH S	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE009	AKHIL ANAND	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE010	AKSHAY A	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE011	AKSHAY KUMAR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE012	AKSHAY SATHIAN K	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE013	AMRITHA A B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE014	AMRUTHA V.P	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE015	ANAGHA RADHAKRISHAN	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE016	ANANDRAJ K.	<del>A</del>	<del>A</del>	<del>A</del>	<del>A</del>	<del>A</del>	<del>A</del>	<del>A</del>	<del>A</del>	<del>A</del>	<del>A</del>	<del>A</del>	<del>A</del>
NCANEEE017	ANJITHA MENON K G	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE018	ANOOP MU	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE019	ARYA T MADHU	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE020	ASHFAQUE P SAIF	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE021	ASHROOF A	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE022	ASWATHY R	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE023	ASWIN M	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE024	ATHIRA RAJAN	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓



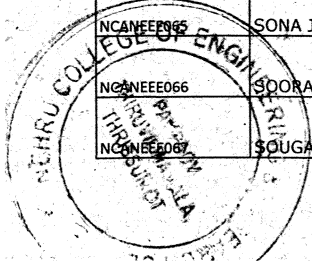
PRINCIPAL  
Nehru College of  
Engineering and Research Centre

Register Number	Student Name	28-06-2014		12-07-2014		26-07-2014		09-08-2014		23-08-2014		27-08-2014	
		FN	AN	FN	AN	FN	AN	FN	AN	FN	AN	FN	AN
NCANEEE025	ATHUL KRISHNAN B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE026	ATHUL SURESH	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE027	AVANEED VISHNU	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE028	DIVYA V	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE029	FIROSE K	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE030	GOKUL DAS R	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE031	GOKUL K	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE032	HARIKRISHNAN K	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE033	HATHIM AHAMED A P	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE034	JACXYMOL JAMES	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE035	JICKSON SAJU	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE036	JIJITHA U	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE037	JINO GEORGE M .	A	A	A	A	A	A	A	A	A	A	A	A



  
**PRINCIPAL**  
 Nehru College of  
 Engineering and Research Centre  
 Pampady, Thiruvilwamala, Thiruvananthapuram  
 Pin - 686 597, Kerala

Register Number	Student Name	28-06-2014		12-07-2014		26-07-2014		09-08-2014		23-08-2014		27-09-2014	
		FN	AN	FN	AN	FN	AN	FN	AN	FN	AN	FN	AN
NCANEEE038	JISHNU CHANDRAN	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE039	KAILAS A.P	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE040	ANILIN R	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE041	KIRAN K KANNAN	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE042	KUNISERRY CHEKINGAL VIPIN	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE043	LEDIYA JACOB	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE044	MADHUSOODANAN K	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE045	MANISH P	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE046	MINHAJ A S	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE047	MOHAMMED HAVAS V.A	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE048	NARENDRA PAI D	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE049	NAYANA M S	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE050	NIKHIL KUMAR V	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE051	NOUSHIYA A	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE052	PRAVEEN K RAVINDRAN	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE053	RAHUL MOHAN	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE054	ROSHAN R	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE055	RUKHIYA FAHMIDHA	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE056	SALMAN P M	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE057	SANDESH VARMA E	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE058	SANJAY LAKSHMAN A	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE059	SARATH S	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE060	SARATH SASIDHARAN	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE061	SARATH SASIKUMAR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE062	SHOBITH P	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE063	SIBIN C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE064	SIDDHARTH KP	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE065	SONA JOHNSON	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE066	SOORAJ S	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE067	SOUGANDH K	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓



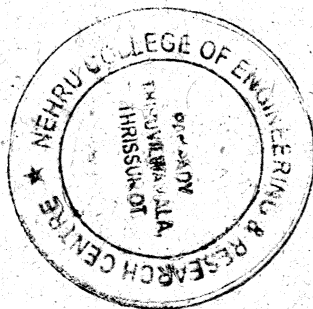
*[Handwritten signature]*

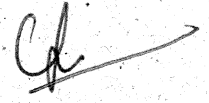
PRINCIPAL  
Nehru College of  
Engineering and Research Centre

Register Number	Student Name	28-06-2014		12-07-2014		26-07-2014		09-08-2014		23-08-2014		27-09-2014	
		FN	AN	FN	AN	FN	AN	FN	AN	FN	AN	FN	AN
NCANEEE068	SRINIDHI K.V	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE069	SUHAIL P P	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE070	SUKANNYA K S	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE071	SUSRUTHA DEV P	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE072	SWAYANA SELVAN	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE073	T.SREELAKSHMI	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE074	V SREERAM	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE075	VEENA T	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE076	VISHNU KR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE077	VISHNU V	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE078	VYSAK SATHYANATH	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE079	YADAV K.S	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCANEEE080	YAJIN RAJAN	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

  
Course Coordinator

  
Principal

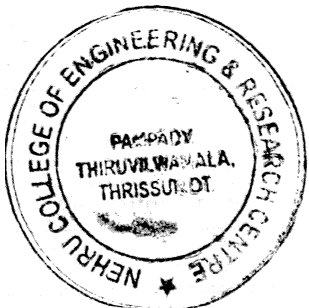



  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvitwamala, Thiruvananthapuram  
Pin 680 597, Kerala

NEHRU COLLEGE OF ENGINEERING & RESEARCH CENTRE

Pampady, Thiruvilwamala, Thrissur Dt.  
Certificate Course on "ELECTRICAL VEHICLE(FUTURE MOBILITY)"  
Electrical & Electronics Engineering(UG)- (2013-17)  
ENROLLMENT LIST

Reg.No.	Student Name
NCANEEE001	ABHIRAMI A.S
NCANEEE002	AISWARYA U
NCANEEE003	AISWARYA K P
NCANEEE004	AISWARYA M S
NCANEEE005	AJAY B
NCANEEE006	AJI GOPAL V
NCANEEE007	AJNA K I
NCANEEE008	AKARSH S
NCANEEE009	AKHIL ANAND
NCANEEE010	AKSHAY A
NCANEEE011	AKSHAY KUMAR
NCANEEE012	AKSHAY SATHIAN K
NCANEEE013	AMRITHA A B
NCANEEE014	AMRUTHA V.P
NCANEEE015	ANAGHA RADHAKRISHAN
NCANEEE016	ANANDRAJ K
NCANEEE017	ANJITHA MENON K G
NCANEEE018	ANOOP MU
NCANEEE019	ARYA T MADHU
NCANEEE020	ASHFAQUE P SAIF
NCANEEE021	ASHROOF A
NCANEEE022	ASWATHY R
NCANEEE023	ASWIN M
NCANEEE024	ATHIRA RAJAN
NCANEEE025	ATHUL KRISHNAN B
NCANEEE026	ATHUL SURESH
NCANEEE027	AVANEED VISHNU
NCANEEE028	DIVYA V
NCANEEE029	FIROSE K
NCANEEE030	GOKUL DAS R
NCANEEE031	GOKUL K
NCANEEE032	HARIKRISHNAN K
NCANEEE033	HATHIM AHAMED A P
NCANEEE034	JACXYMOL JAMES
NCANEEE035	JICKSON SAJU
NCANEEE036	JIJITHA U
NCANEEE037	JINO GEORGE M
NCANEEE038	JISHNU CHANDRAN
NCANEEE039	KAILAS A.P
NCANEEE040	ANILIN R
NCANEEE041	KIRAN K KANNAN
NCANEEE042	KUNISERRY CHEKINGAL VIPIN
NCANEEE043	LEDIYA JACOB
NCANEEE044	MADHUSOODANAN K
NCANEEE045	MANISH P
NCANEEE046	MINHAJ A S



  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thrissur Dt.

NEHRU COLLEGE OF ENGINEERING & RESEARCH CENTRE

(Accredited by NAAC)

Pampady, Thiruvilwamala, Thrissur Dt.


Certificate Course on "ELECTRICAL VEHICLE(FUTURE MOBILITY)"

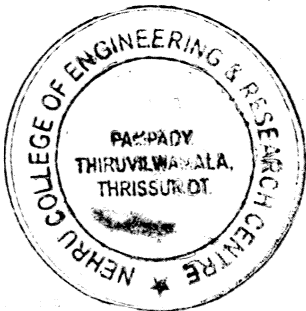
Electrical & Electronics Engineering(UG)- (2013-17)


ENROLLMENT LIST

NCANEEE047	MOHAMMED HAVAS V.A
NCANEEE048	NARENDRA PAI D
NCANEEE049	NAYANA M S
NCANEEE050	NIKHIL KUMAR V
NCANEEE051	NOUSHIYA A
NCANEEE052	PRAVEEN K RAVINDRAN
NCANEEE053	RAHUL MOHAN
NCANEEE054	ROSHAN R
NCANEEE055	RUKHIYA FAHMIDHA
NCANEEE056	SALMAN P M
NCANEEE057	SANDESH VARMA E
NCANEEE058	SANJAY LAKSHMAN A
NCANEEE059	SARATH S
NCANEEE060	SARATH SASIDHARAN
NCANEEE061	SARATH SASIKUMAR
NCANEEE062	SHOBITH P
NCANEEE063	SIBIN C
NCANEEE064	SIDDHARTH KP
NCANEEE065	SONA JOHNSON
NCANEEE066	SOORAJ S
NCANEEE067	SOUGANDH K
NCANEEE068	SRINIDHI K.V
NCANEEE069	SUHAIL P P
NCANEEE070	SUKANNYA K S
NCANEEE071	SUSRUTHA DEV P
NCANEEE072	SWAYANA SELVAN
NCANEEE073	T.SREELAKSHMI
NCANEEE074	V SREERAM
NCANEEE075	VEENA T
NCANEEE076	VISHNU KR
NCANEEE077	VISHNU V
NCANEEE078	VYSAK SATHYANATH
NCANEEE079	YADAV K.S
NCANEEE080	YAJIN RAJAN

  
Course Coordinator

  
HoD



  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thrissur Dt  
Pin - 686 597 Kerala

# NEHRU COLLEGE OF ENGINEERING & RESEARCH CENTRE

*(Approved by NAAC)*  
Pampady, Thiruvilwamala, Thrissur Dt.

## EV(FUTURE MOBILITY)

### SYLLABUS

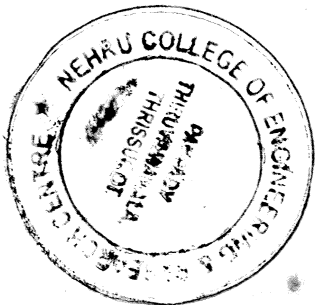
Lecture Modules	EV(FUTURE MOBILITY)
1	Introduction to Electric Vehicles
2	Working of Electric Vehicles Simulation of EV operation
3	
4	Applications of Electric Vehicles
5	Configurations of Electric Vehicles
6	Future of Electric Vehicles



Course Coordinator



HoD



**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala, Thrissur Dt.  
Pin 680 597 Kerala

**NEHRU COLLEGE OF ENGINEERING & RESEARCH CENTRE**

**Pampady, Thiruvilwamala, Thrissur Dt.**

**ELECTRICAL AND ELECTRONICS DEPARTMENT**

**NOTICE**

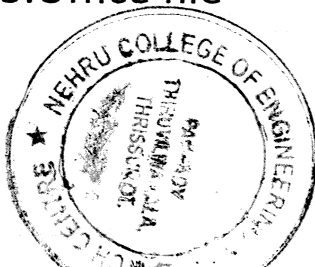
**12.06.2014**


Department has decided to conduct a certificate course on "ELECTRICAL VEHICLE (FUTURE MOBILITY)" on second and fourth Saturdays during this academic year 2014-15. The duration of the course will be for a period of 30 hours. The objective of the course is to impart knowledge on latest developments in power trains. This course will act as a key for enhancing know how of students on power trains and for future career opportunities in field of electric vehicles

The 2013-17 batch admission(UG) of EEE department are eligible for this course. All concerned students should attend the entire course without fail. Attendance is compulsory.

Copy:

1. Department Notice Board
2. Staff advisors (For Information to students)
3. Office file



  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thrissur Dt  
Kerala

  
HoD

FROM,

MAHESWARAN K & RAJESH P,

ASSISTANT PROFESSOR,

EEE DEPARTMENT,

NCERC,

PAMPADY

TO,

THE PRINCIPAL,(THROUGH HOD)

EEE DEPARTMENT,

NCERC,

PAMPADY

Sir,

SUB: Requisition for conducting certificate course on" ELECTRICAL VEHICLE (FUTURE MOBILITY)"-  
Reg.

REF: Office circular No NCERC/3128/F/AC/12/14 dt.12-06-2014

I would like to request your support and permission to conduct a certificate course on "ELECTRICAL VEHICLE (FUTURE MOBILITY " on second and fourth Saturdays during this academic year 2014-15.The duration of the course will be for a period of 30 hours. The objective of the course is to impart knowledge on latest developments in power trains. This course will act as a key for enhancing know how of students on power trains and for future career opportunities in field of electric vehicles

The 2013-17 batch admission(UG) of EEE department are eligible for this course.

So, I kindly request you to provide the permission for doing this certificate course.

Thank you for your consideration. I look forward for your response soon.

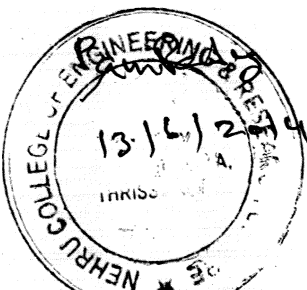
*Recommended & forwarded  
by  
Asvegn*

Your's sincerely,

MAHESWARAN K  
RAJESH P

PRINCIPAL  
Nehru College of

Engineering and Research Centre  
Pampady Thiruvilwamala, Thirsur Dt  
Pin - 690 507 Kerala





# NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE

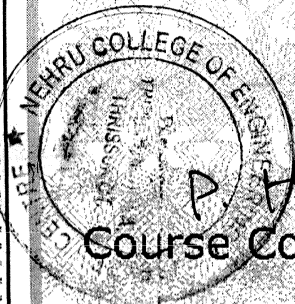
(Approved by AICTE, Affiliated to Calicut University and A P J Abdul Kalam  
Technological University, Kerala)



## CERTIFICATE

This is to Certify that Ms.ATHIRA THANKAM S of Electrical  
and Electronics Engineering Department has successfully completed  
the Certificate/Addon Course on POWER ELECTRONICS  
SIMULATION USING MATLAB

from 28/06/2014 to 27/09/2014 at Nehru College of Engineering &  
Research Centre, Pamapdy.



*A. Thankam S*  
Course Coordinator

*P. S. S.*  
HoD  
EEE Department

*[Signature]*  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre,  
Pamapdy, Thiruvilwamala, Thiruvananthapuram,  
Kerala.  
Pin - 696 593

*[Signature]*  
Principal  
NCERC



# NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE

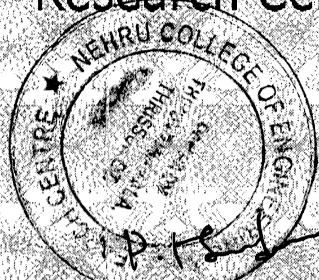
(Approved by AICTE, Affiliated to Calicut University and A P J Abdul Kalam  
Technological University, Kerala)



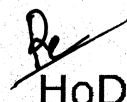
## CERTIFICATE

This is to Certify that Mr. AKHIL KRISHNAN V of Electrical  
and Electronics Engineering Department has successfully completed  
the Certificate/Addon Course on POWER ELECTRONICS  
SIMULATION USING MATLAB


from 28/06/2014 to 27/09/2014 at Nehru College of Engineering &  
Research Centre, Pamapady.



Course Coordinator

  
HoD

EEE Department

  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvikramala, Kerala  
Pin - 680 537

  
Principal  
NCERC



# NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE

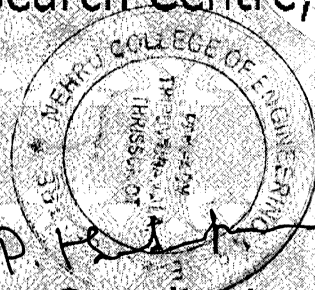
(Approved by AICTE, Affiliated to Calicut University and A P J Abdul Kalam  
Technological University, Kerala)



## CERTIFICATE

This is to Certify that Ms.AKHILA P M of Electrical  
and Electronics Engineering Department has successfully completed  
the Certificate/Addon Course on POWER ELECTRONICS  
SIMULATION USING MATLAB

from 28/06/2014 to 27/09/2014 at Nehru College of Engineering &  
Research Centre, Pamapdy.



Course Coordinator

HoD  
EEE Department

PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pamapdy, Thiruvananthapuram, Kerala  
Pin - 690 597

Principal  
NCERC



# NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE

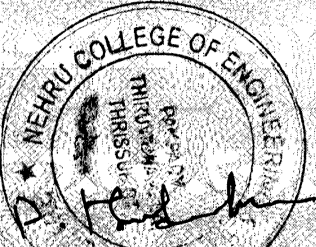
(Approved by AICTE, Affiliated to Calicut University and A P J Abdul Kalam  
Technological University, Kerala)





## CERTIFICATE

This is to Certify that Ms.APARNA R of Electrical  
and Electronics Engineering Department has successfully completed  
the Certificate/Addon Course on POWER ELECTRONICS  
SIMULATION USING MATLAB

from 28/06/2014 to 27/09/2014 at Nehru College of Engineering &  
Research Centre, Pamapdy.

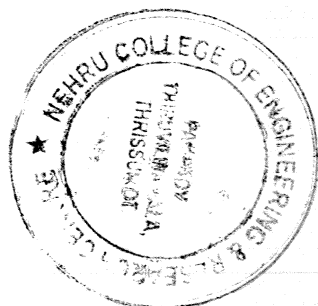
  
Course Coordinador


HoD  
EEE Department

  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pamapdy Thiruvananthapuram, Kerala  
  
Principal  
NCERC

NEHRU COLLEGE OF ENGINEERING & RESEARCH CENTRE  
Pampady, Thiruvilwamala, Thrissur Dt.  
Performance Sheet for Certificate Course "POWER ELECTRONICS SIMULATION USING MATLAB"  
Electrical & Electronics Engineering(UG)- (2012-16)  
PERFORMANCE ANALYSIS

Reg.No.	Student Name	Marks/30
NCAMEEE001	ABDULWARIS K.N	23
NCAMEEE002	ABHILASH K.R	24
NCAMEEE003	ADHARSH V	24
NCAMEEE004	AISWARYA RAJAGOPAL	25
NCAMEEE005	AJAL K	24
NCAMEEE006	AKHIL KRISHNAN V	22
NCAMEEE007	AKHIL PORINCHU	24
NCAMEEE008	AKHILA AJITH	21
NCAMEEE009	AKHILA P.M	20
NCAMEEE010	AKHILESH K	24
NCAMEEE011	AMIT S MENON	23
NCAMEEE012	ANAND S	25
NCAMEEE013	ANAS A	25
NCAMEEE014	ANITHA K	25
NCAMEEE015	ANJANA M.V	20
NCAMEEE016	ANJITHA C	21
NCAMEEE017	APARNA R	23
NCAMEEE018	ARJUN K.G	22
NCAMEEE019	ARJUN P	A-
NCAMEEE020	ARJUN R	28
NCAMEEE021	ARUN P.S	24
NCAMEEE022	ASWATHI ER	25
NCAMEEE023	ASWATHI S	24
NCAMEEE024	ASWIN A NAIR	24
NCAMEEE025	ASWINI A	22
NCAMEEE026	ATHIRA THANKAM S	25
NCAMEEE027	ATHULYA S	20
NCAMEEE028	AYSWARYA K.B	23
NCAMEEE029	DHANALAKSHMI K.R	27
NCAMEEE030	FAIS MUHAMMED V	25
NCAMEEE031	FAIZAL MUHYUDHEEN	24



  
**PRINCIPAL**  
 Nehru College of  
 Engineering and Research Centre  
 Pampady Thiruvilwamala, Thrissur Dt  
 Pin 680 597 Kerala

Reg.No.	Student Name	Marks/30
NCAMEEE032	HASEEB K.S	20
NCAMEEE033	HASHIM K NAZER	A-
NCAMEEE034	HIMA MOHAN	26
NCAMEEE035	HIMALKRISHNA V.V	27
NCAMEEE036	HRIDYA C	25
NCAMEEE037	INDHU C.N	24
NCAMEEE038	JEEVAS V.S	24
NCAMEEE039	JISHNU V	25
NCAMEEE040	JITHIN BENSON	25
NCAMEEE041	JITHIRA A.K	28
NCAMEEE042	JOMICE THOMAS	26
NCAMEEE043	KIRAN P.R	25
NCAMEEE044	LJO JOSE	24
NCAMEEE045	LINEKAR V.J	23
NCAMEEE046	LINI JOYS	27
NCAMEEE047	MADHAVI M.K	27
NCAMEEE048	MANUKRISHNAN K.V	26
NCAMEEE049	YATHISHAN D	26
NCAMEEE050	ABDUL ROUF M	A-
NCAMEEE051	ANJU V	24
NCAMEEE052	MITHUNA M	24
NCAMEEE053	MOHAMMED ALI SHIHAB	25
NCAMEEE054	MOHAMMED JASIM V	23
NCAMEEE055	MOHAMMED RAFEEQ U	22
NCAMEEE056	MUHAMMED JAISAL K.M	23
NCAMEEE057	MUHAMMED NASEEM C	24
NCAMEEE058	MUHAMMED SHAMEEM P.E	24
NCAMEEE059	MURALI KRISHNAN	25
NCAMEEE060	NABEEL A.A	26
NCAMEEE061	NABEEL KOCHUBAVA	26
NCAMEEE062	NAFSAL AHAMMED	25
NCAMEEE063	NAMITHA N.K	24

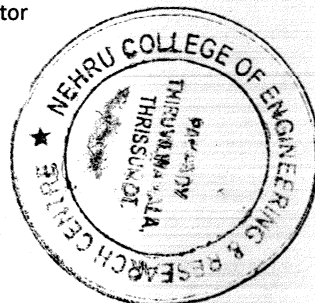


PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvananthapuram  
Dist. Thiruvananthapuram

Reg.No.	Student Name	Marks/30
NCAMEEE064	NEENA MATHEW P	26
NCAMEEE065	NEETHU J MENON	25
NCAMEEE066	NIDHI MOHANDAS	25
NCAMEEE067	NIDHIN U	25
NCAMEEE068	NIRANJANA P.G	27
NCAMEEE069	PAVITHRA K.N	24
NCAMEEE070	PRASAD C.M	22
NCAMEEE071	PRASUTHA T PRASAD	27
NCAMEEE072	PRATHAP KUMAR C	25
NCAMEEE073	PRAVEEN DAS H	24
NCAMEEE074	PREM SAGAR V.P	25
NCAMEEE075	RAKENDU V.S	26
NCAMEEE076	RESHMA M	26
NCAMEEE077	RESHMI KRISHNA V	27
NCAMEEE078	RIBIN RAJ O.P	24
NCAMEEE079	RIJO RAJAN	22
NCAMEEE080	RIYAS K.M	-A-
NCAMEEE081	ROBINS V ANTONY	20
NCAMEEE082	SAJJAD HANEEF PM	21
NCAMEEE083	SANGEETH BALU K	22
NCAMEEE084	SANGEETHA GOPAKUMAR	25
NCAMEEE085	SARANYA SHEETAL N	26
NCAMEEE086	SAROJA P	24
NCAMEEE087	SHEMIL K.T	24
NCAMEEE088	SHIJIN RAMESH	25
NCAMEEE089	SHILPA V	26
NCAMEEE090	SHINCY MOL.K	25
NCAMEEE091	SHYAM S	-A-
NCAMEEE092	SMRITHI V	27
NCAMEEE093	SREEHARI D	26
NCAMEEE094	SREELAKSHMI SHAJITH	29
NCAMEEE095	SREELAKSHMI.SURESH	27
NCAMEEE096	SREENATH NAMBOOTHIRIPAD K.M	26
NCAMEEE097	SREERAJ K	25
NCAMEEE098	SRIRAM S	26
NCAMEEE099	TINTU JOSEPH	27
NCAMEEE100	VIGNESH B MENON	28
NCAMEEE101	VIGNESWARAN A.R	27
NCAMEEE102	VISHNU G	26
NCAMEEE103	VISHNU K.S	25
NCAMEEE104	VISHNU M	27
NCAMEEE105	VISHNUPRIYA P	28
NCAMEEE106	VIVEK M	27
NCAMEEE107	ANIRUDH MENON	26

*P. Ph...*  
Course Coordinator

*Ho*  
HoD



*Principal*  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvananthapuram, Kerala  
696 011



# NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE

(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)



## CERTIFICATION COURSE EXAM

CERTIFICATION COURSE NAME: Power Electronics Simulation Using Matlab

Time: 1 Hr

Marks: 30

Date: 27/09/14

Student Name: Tinto Joseph

Reg. No.: NCAMEE6099

27/30

Department: Electrical And Electronics Engg.

1. Ageing of a selenium rectifier may change the output voltage by

- A. 5 to 10%
- B. 15 to 20%
- C. 25 to 30%
- D. None of the above

2. An inductor filter connected in series with a resistive load provides a

- a) smoothing of the output voltage waveform
- b) smoothing of the input voltage waveform
- c) smoothing of the output current waveform
- d) smoothing

3. The current ripple factor (CRF) is the ratio of

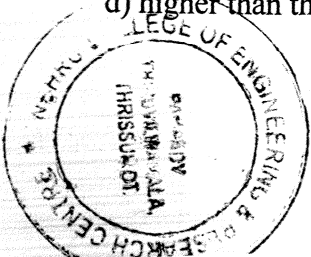
- a) Average value/RMS value
- b) RMS value/Average value
- c) Average value/Maximum value
- d) Maximum value/RMS value


4. In case of an L filter, the ripple current increases with

- a) increase in Load
- b) decrease in Load
- c) increase in the value of L
- d) ripple current never increases

5. An LC filter will have ripple factor value \_\_\_\_\_ (For the same value of L & C)

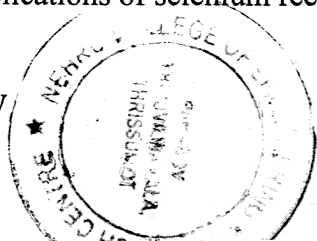
- a) lower than that obtained by L filter but higher than that obtained by C filter
- b) lower than that obtained by C filter but higher than that obtained by L filter
- c) lower than that obtained by either L or C filter
- d) higher than that obtained by either L or C filter



  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pam. Bar. Thiruvananthapuram



6. The MIL is illuminated and a "Battery Module Deterioration" diagnostic trouble code (DTC) is stored. The most likely cause is a failed:
- (A) high voltage battery.
  - (B) high voltage inverter.
  - (C) motor/generator.
  - (D) DC/DC converter.
7. In case of a C filter, if R (load resistance) is increased
- a) ripple factor is reduced
  - b) ripple factor is increased
  - c) ripple factor is not affected
  - d) increases noise in the circuit.
8. In a single-phase full wave rectifier \_\_\_\_\_ order harmonics are the most dominant
- a) first
  - b) second
  - c) third
  - d) fourth
9. Which of the following rectifiers have been used extensively in supply direct current for electroplating
- A. Copper oxide rectifiers
  - B. Selenium rectifiers
  - C. Mercury arc rectifiers
  - D. Mechanical rectifiers
10. which of the following is When a certain type of filter is connected across the R load, of a full wave bridge diode biased rectifier the output current waveform obtained resembles:
- The filter connected is most likely a
- a) L filter
  - b) C filter
  - c) LC filter
  - d) None of the above mentioned
11. The applications of selenium rectifiers are usually limited to potential of
- A. 10 V





NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)

(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)



B. 30 V

~~C. 60 V~~

D. 100 V

12. In a mercury arc rectifier fire the anode is usually made of

~~A. Copper~~

B. Aluminium

C. Silver

D. Graphite

13. Which off the following rectifiers are primarily used for charging of low-voltage batteries from AC supply ?

A. Mechanical rectifiers

~~B. Copper oxide rectifiers~~

C. Selenium rectifiers

D. Electrolytic rectifiers

14. MATLAB stands for:

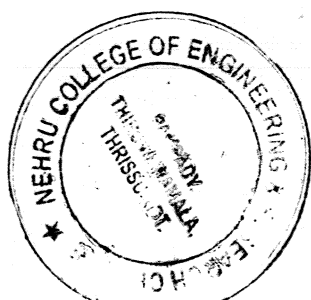
A. Material Laboratory

B. Mathematics Laboratory

C. Maths Laboratory

~~D. Matrix laboratory~~

15. An ideal diode has \_\_\_\_\_ & \_\_\_\_\_  
a) some forward voltage drop, some reverse recovery time  
b) high switching losses, high reverse voltage drop  
~~c) no forward voltage drop, negligible reverse recovery time~~  
d) no reverse recovery time, high leakage current



*cdh*  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Panpady Thiruvananthapuram  
Pin 610 011 Kerala



16. A diode circuit is so arranged that when the switch is open it's KVL gives

$$Ri + 1/C \int i dt = 0$$

When the switch is closed,

$$Ri + 1/C \int i dt = V_s$$

$V_s$  is the dc supply voltage.

The diode is so connected that it is forward biased when switch is closed

The circuit is mostly likely be a

a) diode in parallel with  $V_s$ , switch, R & C

b) diode in series with R, then parallel with  $V_s$  & C

c) diode in series with the switch, R, C &  $V_s$

d) diode in series with R, C &  $V_s$  with the switch connected in parallel across  $V_s$

17. A circuit is so formed such that the source-R-C-diode-switch are in series. Consider the initial voltage across the C to be zero. The diode is so connected that it is forward biased when the switch is closed. When the switch is closed,

a) the current will decay exponentially & the voltage will increase exponentially

b) the current will increase exponentially & the voltage will increase exponentially

c) the current will fall to zero & the voltage both will decay exponentially

d) the voltage and current both remain constant

18. The time constant of a series RC circuit ( $\tau$ ) is given by

a) R/C

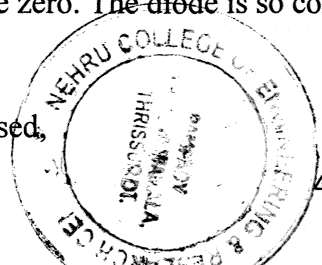
b) C/R

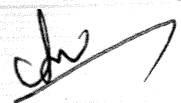
c) RC

d) 1/RC

19. A circuit is so formed such that source-R-L-diode-switch are all in series. Consider the initial current in L to be zero. The diode is so connected that it is forward biased when switch is closed.

When the switch is closed,



  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pambady, Thiruvananthapuram, Kerala



NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE

(NAAC Accredited)

(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)



- a) the current will decay exponentially & the voltage will increase exponentially
- b) the current will increase exponentially & the voltage will decay exponentially
- c) the current will fall to zero & the voltage both will decay exponentially
- d) the voltage and the current both remain constant

20. For a diode circuit the voltage across the capacitor is given by

$$V_c(t) = V_s(1 - e^{-t/RC})$$

Then the initial rate of change of capacitor voltage is given by

- a) 0
- b)  $\infty$
- c)  $V_s \times RC$
- d)  $V_s/RC$

21. The time constant of a series RL circuit ( $\tau$ ) is given by

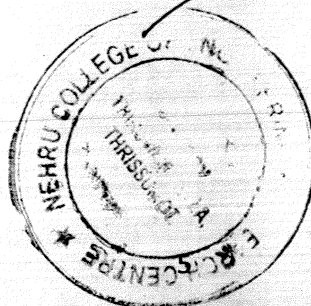
- a)  $R/L$
- b)  $L/R$
- c)  $RC$
- d)  $1/RL$

22. Which of the following devices does not belong to the transistor family?

- a) IGBT
- b) MOSFET
- c) GTO
- d) BJT

23. A power transistor is a

- a) three layer, three junction device
- b) three layer, two junction device
- c) two layer, one junction device



PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Panipady Thiruvilwamala Thrissur Dist  
Pin 680 597 Kerala



**NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE**  
**(NAAC Accredited)**

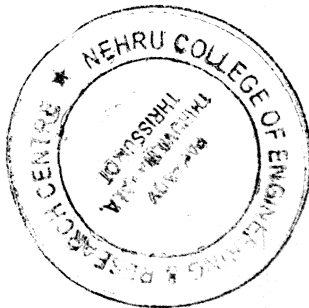
(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)



d) four layer, three junction device

24. In a power transistor, \_\_\_\_\_ is the controlled parameter.

- a)  $V_{BE}$
- b)  $V_{CE}$
- c)  $I_B$
- d)  $I_C$



**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Panpady Thiruvilwamala, Trissur Dt  
Pin 680 597 Kerala



25. A power transistor is a \_\_\_\_\_ device.

- a) two terminal, bipolar, voltage controlled
- b) two terminal, unipolar, current controlled
- c) three terminal, unipolar, voltage controlled
- d) three terminal, bipolar, current controlled

26. In a power transistor, the  $I_B$  vs  $V_{BE}$  curve is

- a) a parabolic curve
- b) an exponentially decaying curve
- c) resembling the diode curve
- d) a straight line  $Y = I_B$

27. For a power transistor, if the base current  $I_B$  is increased keeping  $V_{CE}$  constant, then

- a)  $I_C$  increases
- b)  $I_C$  decreases
- c)  $I_C$  remains constant
- d) none of the mentioned

28. The forward current gain  $\alpha$  is given by

- a)  $I_C/I_B$
- b)  $I_C/I_E$
- c)  $I_E/I_C$
- d)  $I_E/I_B$


29. The value of  $\beta$  is given by the expression

- a)  $I_C/I_B$
- b)  $I_C/I_E$
- c)  $I_E/I_C$
- d)  $I_E/I_B$

30. A power BJT is used as a power control switch by biasing it in the cut off region (off state) or in the saturation region (on state). In the on state

- a) both the base-emitter & base-collector junctions are forward biased
- b) the base-emitter junction is reverse biased, and the base collector junction is forward biased
- c) the base-emitter junction is forward biased, and the base collector junction is reversed biased
- d) both the base-collector & the base-emitter junctions are reversed biased



  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamata, Thrissur Dt  
Pin 680 597 Kerala



# NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE

(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)



## CERTIFICATION COURSE EXAM

CERTIFICATION COURSE NAME: Power Electronics Simulation Using Matlab

Time: 1 Hr

Marks: 30

Date: 27/09/14

Student Name: Sreelakshmi.S

Reg. No.: NCAMEEE 094

29/30

Department: Electrical And Electronics Engg.

1. Ageing of a selenium rectifier may change the output voltage by

A. 5 to 10%

B. 15 to 20%

C. 25 to 30%

D. None of the above

2. An inductor filter connected in series with a resistive load provides a

a) smoothing of the output voltage waveform

b) smoothing of the input voltage waveform

c) smoothing of the output current waveform

d) smoothing

3. The current ripple factor (CRF) is the ratio of

a) Average value/RMS value

b) RMS value/Average value

c) Average value/Maximum value

d) Maximum value/RMS value

4. In case of an L filter, the ripple current increases with

a) increase in Load

b) decrease in Load

c) increase in the value of L

d) ripple current never increases

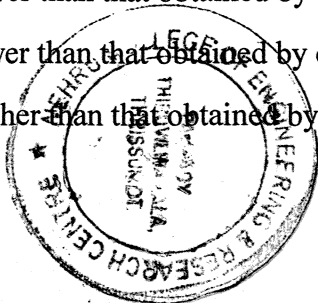
5. An LC filter will have ripple factor value \_\_\_\_\_ (For the same value of L & C)

a) lower than that obtained by L filter but higher than that obtained by C filter

b) lower than that obtained by C filter but higher than that obtained by L filter

c) lower than that obtained by either L or C filter

d) higher than that obtained by either L or C filter



PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Panampady Thiruvilwamala, Thirissur  
686 017 Kerala



NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE

(NAAC Accredited)

(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)



6. The MIL is illuminated and a "Battery Module Deterioration" diagnostic trouble code (DTC) is stored. The most likely cause is a failed:

- (A) high voltage battery.
- (B) high voltage inverter.
- (C) motor/generator.
- (D) DC/DC converter.

7. In case of a C filter, if R (load resistance) is increased

- a) ripple factor is reduced
- b) ripple factor is increased
- c) ripple factor is not affected
- d) increases noise in the circuit.

8. In a single-phase full wave rectifier \_\_\_\_\_ order harmonics are the most dominant

- a) first
- b) second
- c) third
- d) fourth

9. Which of the following rectifiers have been used extensively in supply direct current for electroplating

- A. Copper oxide rectifiers
- B. Selenium rectifiers
- C. Mercury arc rectifiers
- D. Mechanical rectifiers

10. which of the following isWhen a certain type of filter is connected across the R load, of a full wave bridge diode biased rectifier the output current waveform obtained resembles:

The filter connected is most likely a

- a) L filter
- b) C filter
- c) LC filter
- d) None of the above mentioned

11. The applications of selenium rectifiers are usually limited to potential of





NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)

(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)



B. 30 V

~~C. 60 V~~

D. 100 V

12. In a mercury arc rectifier fire the anode is usually made of

~~A. Copper~~

B. Aluminium

C. Silver

D. Graphite

13. Which off the following rectifiers are primarily used for charging of low-voltage batteries from AC supply ?

A. Mechanical rectifiers

~~B. Copper oxide rectifiers~~

C. Selenium rectifiers

D. Electrolytic rectifiers

14. MATLAB stands for:

A. Material Laboratory

~~B. Mathematics Laboratory~~

~~C. Maths Laboratory~~

~~D. Matrix laboratory~~

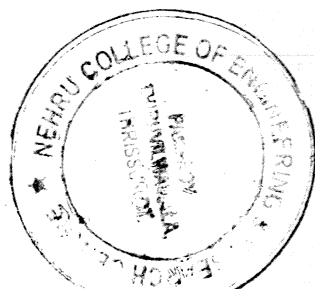
15. An ideal diode has \_\_\_\_\_ & \_\_\_\_\_


a) some forward voltage drop, some reverse recovery time

b) high switching losses, high reverse voltage drop

~~c) no forward voltage drop, negligible reverse recovery time~~

d) no reverse recovery time, high leakage current



  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvananthapuram



16. A diode circuit is so arranged that when the switch is open it's KVL gives

$$Ri + 1/C \int i dt = 0$$

When the switch is closed,

$$Ri + 1/C \int i dt = V_s$$

$V_s$  is the dc supply voltage.

The diode is so connected that it is forward biased when switch is closed

The circuit is mostly likely be a

- a) diode in parallel with  $V_s$ , switch, R & C
- b) diode in series with R, than parallel with  $V_s$  & C
- c) diode in series with the switch, R, C &  $V_s$
- d) diode in series with R, C &  $V_s$  with the switch connected in parallel across  $V_s$

17. A circuit is so formed such that the source-R-C-diode-switch are in series. Consider the initial voltage across the C to be zero. The diode is so connected that it is forward biased when the switch is closed. When the switch is closed,

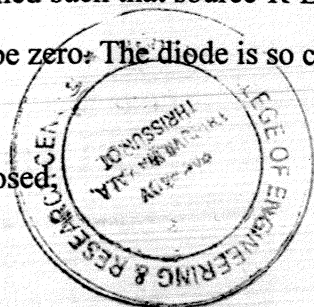
- a) the current will decay exponentially & the voltage will increase exponentially
- b) the current will increase exponentially & the voltage will increase exponentially
- c) the current will fall to zero & the voltage both will decay exponentially
- d) the voltage and current both remain constant

18. The time constant of a series RC circuit ( $\tau$ ) is given by

- a) R/C
- b) C/R
- c) RC
- d) 1/RC

19. A circuit is so formed such that source-R-L-diode-switch are all in series. Consider the initial current in L to be zero. The diode is so connected that it is forward biased when switch is closed.

When the switch is closed,





NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)

(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)

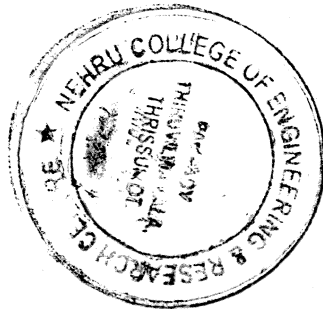


d) four layer, three junction  
device

24. In a power transistor, \_\_\_\_\_  
is the controlled parameter.

- a) VBE
- b) VCE
- c) IB
- d) IC

PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thrissur Dist.  
Pin 680 597 Kerala






NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)

(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)



25. A power transistor is a \_\_\_\_\_ device.
- a) two terminal, bipolar, voltage controlled
  - b) two terminal, unipolar, current controlled
  - c) three terminal, unipolar, voltage controlled
  - d) three terminal, bipolar, current controlled
26. In a power transistor, the  $I_B$  vs  $V_{BE}$  curve is
- a) a parabolic curve
  - b) an exponentially decaying curve
  - c) resembling the diode curve
  - d) a straight line  $Y = I_B$
27. For a power transistor, if the base current  $I_B$  is increased keeping  $V_{CE}$  constant, then
- a)  $I_C$  increases
  - b)  $I_C$  decreases
  - c)  $I_C$  remains constant
  - d) none of the mentioned
28. The forward current gain  $\alpha$  is given by
- a)  $I_C/I_B$
  - b)  $I_C/I_E$
  - c)  $I_E/I_C$
  - d)  $I_E/I_B$
29. The value of  $\beta$  is given by the expression
- a)  $I_C/I_B$
  - b)  $I_C/I_E$
  - c)  $I_E/I_C$
  - d)  $I_E/I_B$
30. A power BJT is used as a power control switch by biasing it in the cut off region (off state) or in the saturation region (on state). In the on state
- a) both the base-emitter & base-collector junctions are forward biased
  - b) the base-emitter junction is reverse biased, and the base collector junction is forward biased
  - c) the base-emitter junction is forward biased, and the base collector junction is reversed biased
  - d) both the base-collector & the base-emitter junctions are reversed biased



  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala Thrissur UT  
Pin 680 597 Kerala



# NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE

(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)



## CERTIFICATION COURSE EXAM

CERTIFICATION COURSE NAME: Power Electronics Simulation Using Matlab

Time: 1 Hr

Marks: 30

Date: 27-09-14

Student Name: ARJUN. R

Reg. No.: NCAMEEE020

Department: Electrical And Electronics Engg.

1. Ageing of a selenium rectifier may change the output voltage by

- A. 5 to 10%
- B. 15 to 20%
- C. 25 to 30%
- D. None of the above

2. An inductor filter connected in series with a resistive load provides a

- a) smoothing of the output voltage waveform
- b) smoothing of the input voltage waveform
- c) smoothing of the output current waveform
- d) smoothing

3. The current ripple factor (CRF) is the ratio of

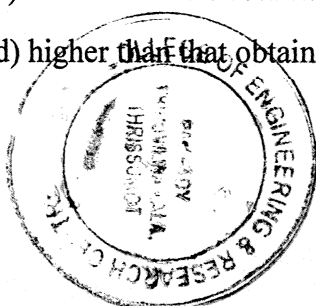
- a) Average value/RMS value
- b) RMS value/Average value
- c) Average value/Maximum value
- d) Maximum value/RMS value

4. In case of an L filter, the ripple current increases with

- a) increase in Load
- b) decrease in Load
- c) increase in the value of L
- d) ripple current never increases

5. An LC filter will have ripple factor value \_\_\_\_\_ (For the same value of L & C)

- a) lower than that obtained by L filter but higher than that obtained by C filter
- b) lower than that obtained by C filter but higher than that obtained by L filter
- c) lower than that obtained by either L or C filter
- d) higher than that obtained by either L or C filter





NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)

(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)



6. The MIL is illuminated and a "Battery Module Deterioration" diagnostic trouble code (DTC) is stored. The most likely cause is a failed:

- (A) high voltage battery.
- (B) high voltage inverter.
- (C) motor/generator.
- (D) DC/DC converter.

7. In case of a C filter, if R (load resistance) is increased

- a) ripple factor is reduced
- b) ripple factor is increased
- c) ripple factor is not affected
- d) increases noise in the circuit.

8. In a single-phase full wave rectifier \_\_\_\_\_ order harmonics are the most dominant

- a) first
- b) second
- c) third
- d) fourth

9. Which of the following rectifiers have been used extensively in supply direct current for electroplating

- A. Copper oxide rectifiers
- B. Selenium rectifiers
- C. Mercury arc rectifiers
- D. Mechanical rectifiers

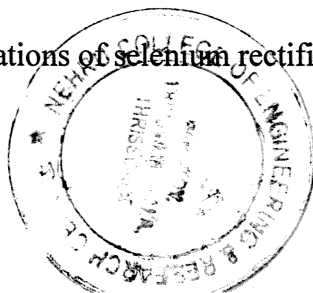
10. which of the following is When a certain type of filter is connected across the R load, of a full wave bridge diode biased rectifier the output current waveform obtained resembles:

The filter connected is most likely a

- a) L filter
- b) C filter
- c) LC filter
- d) None of the above mentioned

11. The applications of selenium rectifiers are usually limited to potential of

A. 10 V





B. 30 V

~~C. 60 V~~

D. 100 V

12. In a mercury arc rectifier fire the anode is usually made of

~~A. Copper~~

B. Aluminium

C. Silver

D. Graphite

13. Which off the following rectifiers are primarily used for charging of low-voltage batteries from AC supply ?

A. Mechanical rectifiers

~~B. Copper oxide rectifiers~~

C. Selenium rectifiers

D. Electrolytic rectifiers

14. MATLAB stands for:

A. Material Laboratory

B. Mathematics Laboratory

C. Maths Laboratory

~~D. Matrix laboratory~~

15. An ideal diode has \_\_\_\_\_ & \_\_\_\_\_

a) some forward voltage drop, some reverse recovery time

b) high switching losses, high reverse voltage drop

~~c) no forward voltage drop, negligible reverse recovery time~~

d) no reverse recovery time, high leakage current





16. A diode circuit is so arranged that when the switch is open it's KVL gives

$$Ri + 1/C \int i dt = 0$$

When the switch is closed,

$$Ri + 1/C \int i dt = V_s$$

$V_s$  is the dc supply voltage.

The diode is so connected that it is forward biased when switch is closed

The circuit is mostly likely be a

- a) diode in parallel with  $V_s$ , switch, R & C
- b) diode in series with R, then parallel with  $V_s$  & C
- c) diode in series with the switch, R, C &  $V_s$
- d) diode in series with R, C &  $V_s$  with the switch connected in parallel across  $V_s$

17. A circuit is so formed such that the source-R-C-diode-switch are in series. Consider the initial voltage across the C to be zero. The diode is so connected that it is forward biased when the switch is closed. When the switch is closed,

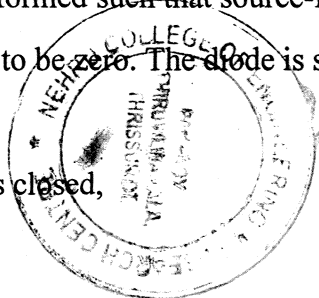
- a) the current will decay exponentially & the voltage will increase exponentially
- b) the current will increase exponentially & the voltage will increase exponentially
- c) the current will fall to zero & the voltage both will decay exponentially
- d) the voltage and current both remain constant

18. The time constant of a series RC circuit ( $\tau$ ) is given by

- a) R/C
- b) C/R
- c) RC
- d) 1/RC

19. A circuit is so formed such that source-R-L-diode-switch are all in series. Consider the initial current in L to be zero. The diode is so connected that it is forward biased when switch is closed.

When the switch is closed,





NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)

(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)



- a) the current will decay exponentially & the voltage will increase exponentially
- b) the current will increase exponentially & the voltage will decay exponentially
- c) the current will fall to zero & the voltage both will decay exponentially
- d) the voltage and the current both remain constant

20. For a diode circuit the voltage across the capacitor is given by

$$V_c(t) = V_s(1 - e^{-t/RC})$$

Then the initial rate of change of capacitor voltage is given by

- a) 0
- b)  $\infty$
- c)  $V_s \times RC$
- d)  $V_s/RC$

21. The time constant of a series RL circuit ( $\tau$ ) is given by

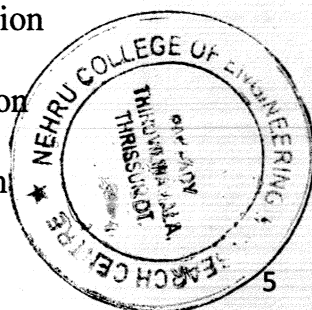
- a)  $R/L$
- b)  $L/R$
- c)  $RC$
- d)  $1/RL$

22. Which of the following devices does not belong to the transistor family?

- a) IGBT
- b) MOSFET
- c) GTO
- d) BJT

23. A power transistor is a

- a) three layer, three junction device
- b) three layer, two junction device
- c) two layer, one junction device



*cdh*  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Campady Thiruvivamana, Thiruvardur  
Dist. Thiruv. 680 597 Kerala



**NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE**  
**(NAAC Accredited)**

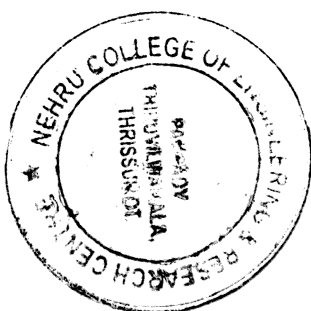
(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)




d) four layer, three junction device

24. In a power transistor, \_\_\_\_\_ is the controlled parameter.

- a) ~~VBE~~
- b) ~~VCE~~
- c) IB
- d) IC



  
**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Panipady, Thiruvilwamala, Thirissur Dt  
Pin 680 597 Kerala



NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)  
(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)



25. A power transistor is a \_\_\_\_\_ device.
- a) two terminal, bipolar, voltage controlled
  - b) two terminal, unipolar, current controlled
  - c) three terminal, unipolar, voltage controlled
  - d) three terminal, bipolar, current controlled
26. In a power transistor, the  $I_B$  vs  $V_{BE}$  curve is
- a) a parabolic curve
  - b) an exponentially decaying curve
  - c) resembling the diode curve
  - d) a straight line  $Y = IB$
27. For a power transistor, if the base current  $I_B$  is increased keeping  $V_{CE}$  constant, then
- a)  $I_C$  increases
  - b)  $I_C$  decreases
  - c)  $I_C$  remains constant
  - d) none of the mentioned
28. The forward current gain  $\alpha$  is given by
- a)  $I_C/I_B$
  - b)  $I_C/I_E$
  - c)  $I_E/I_C$
  - d)  $I_E/I_B$
29. The value of  $\beta$  is given by the expression
- a)  $I_C/I_B$
  - b)  $I_C/I_E$
  - c)  $I_E/I_C$
  - d)  $I_E/I_B$
30. A power BJT is used as a power control switch by biasing it in the cut off region (off state) or in the saturation region (on state). In the on state
- a) both the base-emitter & base-collector junctions are forward biased
  - b) the base-emitter junction is reverse biased, and the base collector junction is forward biased
  - c) the base-emitter junction is forward biased, and the base collector junction is reversed biased
  - d) both the base-collector & the base-emitter junctions are reversed biased



*Ch*  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Panipady, Thiruvivimala, Thirissur Dt  
Pin 680 597 Kerala

NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE

PAMPADY, THIRUVILWAMALA, THRISSUR (DT) – 680 588

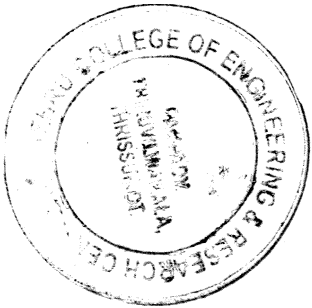
POWER ELECTRONICS SIMULATION USING MATLAB

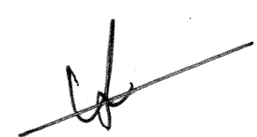
ANSWER KEY

Question No.	Answer	Question No.	Answer
1	d	16	d
2	b	17	b
3	c	18	c
4	a	19	b
5	c	20	d
6	b	21	b
7	d	22	a
8	a	23	a
9	a	24	d
10	a	25	c
11	c	26	b
12	c	27	b
13	a	28	a
14	b	29	d
15	d	30	d

  
Course Coordinator

  
HoD



  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thiruvananthapuram Dt  
Pin - 680 587 Kerala

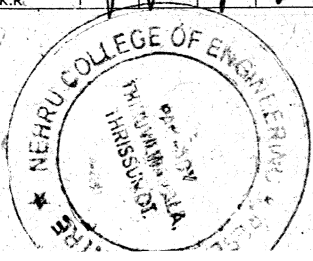
NEHRU COLLEGE OF ENGINEERING & RESEARCH CENTRE

Pampady, Thiruvilwamala, Thrissur Dt.

Attendance Sheet for Certificate Course "POWER ELECTRONICS SIMULATION USING MATLAB "

Electrical & Electronics Engineering(UG)- (2012-16)

Register Number	Student Name	28-06-2014		12-07-2014		26-07-2014		09-08-2014		23-08-2014		27-09-2014	
		FN	AN	FN	AN	FN	AN	FN	AN	FN	AN	FN	AN
NCAMEEE001	ABDULWARIS K.N	P	P	P	P	P	P	P	P	P	P	P	P
NCAMEEE002	ABHILASH K.R	P	P	P	P	P	P	P	P	P	P	P	P
NCAMEEE003	ADHARSH V	P	P	P	P	P	P	P	P	P	P	P	P
NCAMEEE004	AISWARYA RAJAGOPAL	P	P	P	P	P	P	P	P	P	P	P	P
NCAMEEE005	AJAL K	P	P	P	P	P	P	P	P	P	P	P	P
NCAMEEE006	AKHIL KRISHNAN V	P	P	P	P	P	P	P	P	P	P	P	P
NCAMEEE007	AKHIL PORINCHU	P	P	P	P	P	P	P	P	P	P	P	P
NCAMEEE008	AKHILA AJITH	P	P	P	P	P	P	P	P	P	P	P	P
NCAMEEE009	AKHILA P.M	P	P	P	P	P	P	P	P	P	P	P	P
NCAMEEE010	AKHILESH K	P	P	P	P	P	P	P	P	P	P	P	P
NCAMEEE011	AMIT S MENON	P	P	P	P	P	P	P	P	P	P	P	P
NCAMEEE012	ANAND S	P	P	P	P	P	P	P	P	P	P	P	P
NCAMEEE013	ANAS A	P	P	P	P	P	P	P	P	P	P	P	P
NCAMEEE014	ANITHA K	P	P	P	P	P	P	P	P	P	P	P	P
NCAMEEE015	ANJANA M.V	P	P	P	P	P	P	P	P	P	P	P	P
NCAMEEE016	ANJITHA C	P	P	P	P	P	P	P	P	P	P	P	P
NCAMEEE017	APARNA R	P	P	P	P	P	P	P	P	P	P	P	P
NCAMEEE018	ARJUN K.G	P	P	P	P	P	P	P	P	P	P	P	P
NCAMEEE019	ARJUN P	<del>A</del>	<del>A</del>	<del>A</del>	<del>A</del>	<del>A</del>	<del>A</del>	<del>A</del>	<del>A</del>	<del>A</del>	<del>A</del>	<del>A</del>	<del>A</del>
NCAMEEE020	ARJUN R	P	P	P	P	P	P	P	P	P	P	P	P
NCAMEEE021	ARUN P.S	P	P	P	P	P	P	P	P	P	P	P	P
NCAMEEE022	ASWATHI ER	P	P	P	P	P	P	P	P	P	P	P	P
NCAMEEE023	ASWATHI S	P	P	P	P	P	P	P	P	P	P	P	P
NCAMEEE024	ASWIN A NAIR	P	P	P	P	P	P	P	P	P	P	P	P
NCAMEEE025	ASWINI A	P	P	P	P	P	P	P	P	P	P	P	P
NCAMEEE026	ATHIRA THANKAM S	P	P	P	P	P	P	P	P	P	P	P	P
NCAMEEE027	ATHULYA S	P	P	P	P	P	P	P	P	P	P	P	P
NCAMEEE028	AYSWARYA K.B	P	P	P	P	P	P	P	P	P	P	P	P
NCAMEEE029	DHANALAKSHMI K.R.	P	P	P	P	P	P	P	P	P	P	P	P

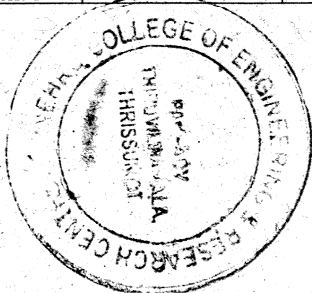


*[Signature]*

PRINCIPAL

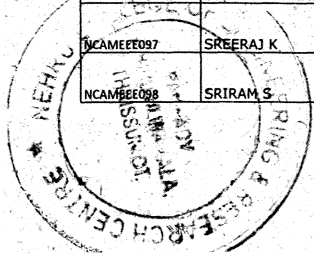
Nehru College of Engineering and Research Centre  
Pampady, Thiruvilwamala, Thrissur Dt.

Register Number	Student Name	28-06-2014		12-07-2014		26-07-2014		09-08-2014		23-08-2014		27-09-2014	
		FN	AN	FN	AN	FN	AN	FN	AN	FN	AN	FN	AN
NCAMEEE030	FAIS MUHAMMED V	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCAMEEE031	FAIZAL MUHYUDHEEN	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCAMEEE032	HASEEB K.S.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCAMEEE033	HASHIM K NAZER	A	A	A	A	A	A	A	A	A	A	A	A
NCAMEEE034	HIMA MOHAN	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCAMEEE035	HIMALKRISHNA V.V	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCAMEEE036	HRIDYA C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCAMEEE037	INDHU C.N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCAMEEE038	JEEVAS V.S	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCAMEEE039	JISHNU V	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCAMEEE040	JITHIN BENSON	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCAMEEE041	JITHIRA A.K	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCAMEEE042	JOMICE THOMAS	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCAMEEE043	KIRAN P.R	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCAMEEE044	LJO JOSE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCAMEEE045	LINEKAR V.J	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCAMEEE046	LINI JOYS	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCAMEEE047	MADHAVI M.K	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCAMEEE048	MANUKRISHNAN K.V	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCAMEEE049	YATHISHAN D	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCAMEEE050	ABDUL ROUF M	A	A	A	A	A	A	A	A	A	A	A	A
NCAMEEE051	ANJU V	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCAMEEE052	MITHUNA M	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCAMEEE053	MOHAMMED ALI SHIHAB	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCAMEEE054	MOHAMMED JASIM V	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCAMEEE055	MOHAMMED RAFEEQ U	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCAMEEE056	MUHAMMED JAISAL K.M	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCAMEEE057	MUHAMMED NASEEM C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCAMEEE058	MUHAMMED SHAMEEM P.E	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCAMEEE059	MURALI KRISHNAN	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCAMEEE060	NABEEL A.A	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCAMEEE061	NABEEL KOCHUBAVA	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCAMEEE062	NAFSAL AHAMMED	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓



PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvananthapuram

Register Number	Student Name	28-06-2014		12-07-2014		26-07-2014		09-08-2014		23-08-2014		27-09-2014	
		FN	AN	FN	AN	FN	AN	FN	AN	FN	AN	FN	AN
NCAMEEE063	NAMITHA N.K	/	/	/	/	/	/	/	/	/	/	/	/
NCAMEEE064	NEENA MATHEW P	/	/	/	/	/	/	/	/	/	/	/	/
NCAMEEE065	NEETHU J MENON	/	/	/	/	/	/	/	/	/	/	/	/
NCAMEEE066	NIDHI MOHANDAS	/	/	/	/	/	/	/	/	/	/	/	/
NCAMEEE067	NIDHIN U	/	/	/	/	/	/	/	/	/	/	/	/
NCAMEEE068	NIRANJANA P.G	/	/	/	/	/	/	/	/	/	/	/	/
NCAMEEE069	PAVITHRA K.N	/	/	/	/	/	/	/	/	/	/	/	/
NCAMEEE070	PRASAD C.M	/	/	/	/	/	/	/	/	/	/	/	/
NCAMEEE071	PRASUTHA T PRASAD	/	/	/	/	/	/	/	/	/	/	/	/
NCAMEEE072	PRATHAP KUMAR C	/	/	/	/	/	/	/	/	/	/	/	/
NCAMEEE073	PRAVEEN DAS H	/	/	/	/	/	/	/	/	/	/	/	/
NCAMEEE074	PREM SAGAR V.P	/	/	/	/	/	/	/	/	/	/	/	/
NCAMEEE075	RAKENDU V.S	/	/	/	/	/	/	/	/	/	/	/	/
NCAMEEE076	RESHMA M	/	/	/	/	/	/	/	/	/	/	/	/
NCAMEEE077	RESHMI KRISHNA V	/	/	/	/	/	/	/	/	/	/	/	/
NCAMEEE078	RIBIN RAJ O.P	/	/	/	/	/	/	/	/	/	/	/	/
NCAMEEE079	RIJO RAJAN	/	/	/	/	/	/	/	/	/	/	/	/
NCAMEEE080	RIYAS K.M	A	A	A	A	A	A	A	A	A	A	A	A
NCAMEEE081	ROBINS V ANTONY	/	/	/	/	/	/	/	/	/	/	/	/
NCAMEEE082	SAJJAD HANEEF PM	/	/	/	/	/	/	/	/	/	/	/	/
NCAMEEE083	SANGEETH BALU K	/	/	/	/	/	/	/	/	/	/	/	/
NCAMEEE084	SANGEETHA GOPAKUMAR	/	/	/	/	/	/	/	/	/	/	/	/
NCAMEEE085	SARANYA SHEETAL N	/	/	/	/	/	/	/	/	/	/	/	/
NCAMEEE086	SAROJA P	/	/	/	/	/	/	/	/	/	/	/	/
NCAMEEE087	SHEMIL K.T	/	/	/	/	/	/	/	/	/	/	/	/
NCAMEEE088	SHIJIN RAMESH	/	/	/	/	/	/	/	/	/	/	/	/
NCAMEEE089	SHILPA V	/	/	/	/	/	/	/	/	/	/	/	/
NCAMEEE090	SHINCY MOL.K	/	/	/	/	/	/	/	/	/	/	/	/
NCAMEEE091	SHYAM S	A	A	A	A	A	A	A	A	A	A	A	A
NCAMEEE092	SMRITHI V	/	/	/	/	/	/	/	/	/	/	/	/
NCAMEEE093	SREEHARI D	/	/	/	/	/	/	/	/	/	/	/	/
NCAMEEE094	SREELAKSHMI SHAJITH	/	/	/	/	/	/	/	/	/	/	/	/
NCAMEEE095	SREELAKSHMI.SURESH	/	/	/	/	/	/	/	/	/	/	/	/
NCAMEEE096	SREENATH NAMBOOTHIRIPAD K.M	/	/	/	/	/	/	/	/	/	/	/	/
NCAMEEE097	SREERAJ K	/	/	/	/	/	/	/	/	/	/	/	/
NCAMEEE098	SRIRAM S	/	/	/	/	/	/	/	/	/	/	/	/



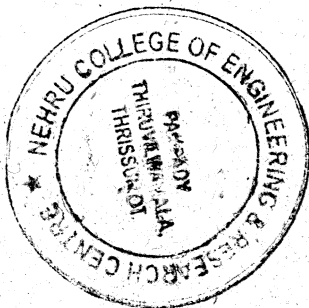
*Ch*

PRINCIPAL  
Nehru College of  
Engineering and Research Centre

Register Number	Student Name	28-06-2014		12-07-2014		26-07-2014		09-08-2014		23-08-2014		27-09-2014	
		FN	AN	FN	AN	FN	AN	FN	AN	FN	AN	FN	AN
NCAMEEE099	TINTU JOSEPH	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCAMEEE100	VIGNESH B MENON	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCAMEEE101	VIGNESWARAN A.R	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCAMEEE102	VISHNU G	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCAMEEE103	VISHNU K.S	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCAMEEE104	VISHNU M	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCAMEEE105	VISHNUPRIYA P	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCAMEEE106	VIVEK M	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCAMEEE107	ANIRUDH MENON	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

*P. H. S.*  
Course Coordinator

*[Signature]*  
HoD



*[Signature]*  
**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Panipady Thiruvilwamala, Thiruvananthapuram Dt.  
Pin - 680 501, Kerala

NEHRU COLLEGE OF ENGINEERING & RESEARCH CENTRE

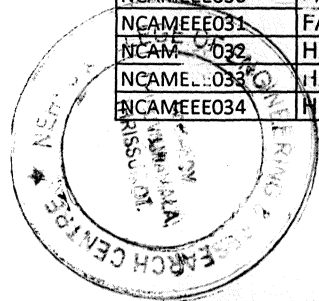
Pampady, Thiruvilwamala, Thrissur Dt.

Certificate Course on "POWER ELECTRONICS SIMULATION USING MATLAB "

Electrical & Electronics Engineering(UG) - (2012-16) Batch

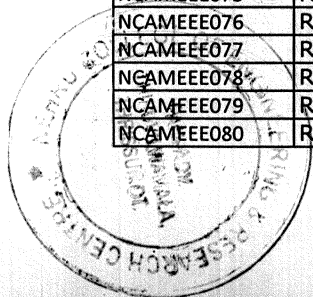
ENROLLMENT LIST

Register Number	Student Name
NCAMEEE001	ABDULWARIS K.N
NCAMEEE002	ABHILASH K.R
NCAMEEE003	ADHARSH V
NCAMEEE004	AISWARYA RAJAGOPAL
NCAMEEE005	AJAL K
NCAMEEE006	AKHIL KRISHNAN V
NCAMEEE007	AKHIL PORINCHU
NCAMEEE008	AKHILA AJITH
NCAMEEE009	AKHILA P.M
NCAMEEE010	AKHILESH K
NCAMEEE011	AMIT S MENON
NCAMEEE012	ANAND S
NCAMEEE013	ANAS A
NCAMEEE014	ANITHA K
NCAMEEE015	ANJANA M.V
NCAMEEE016	ANJITHA C
NCAMEEE017	APARNA R
NCAMEEE018	ARJUN K.G
NCAMEEE019	ARJUN P
NCAMEEE020	ARJUN R
NCAMEEE021	ARUN P.S
NCAMEEE022	ASWATHI ER
NCAMEEE023	ASWATHI S
NCAMEEE024	ASWIN A NAIR
NCAMEEE025	ASWINI A
NCAMEEE026	ATHIRA THANKAM S
NCAMEEE027	ATHULYA S
NCAMEEE028	AYSWARYA K.B
NCAMEEE029	DHANALAKSHMI K.R
NCAMEEE030	FAIS MUHAMMED V
NCAMEEE031	FAIZAL MUHYUDHEEN
NCAMEEE032	HASEEB K.S
NCAMEEE033	HASHIM K NAZER
NCAMEEE034	HIMA MOHAN



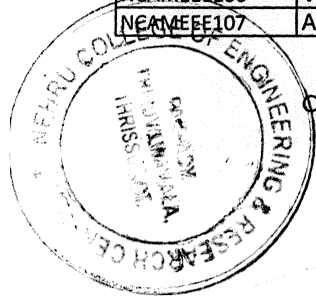
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thrissur Dt  
Pin 680 597 Kerala

NCAMEEE035	HIMALKRISHNA V.V
NCAMEEE036	HRIDYA C
NCAMEEE037	INDHU C.N
NCAMEEE038	JEEVAS V.S
NCAMEEE039	JISHNU V
NCAMEEE040	JITHIN BENSON
NCAMEEE041	JITHIRA A.K
NCAMEEE042	JOMICE THOMAS
NCAMEEE043	KIRAN P.R
NCAMEEE044	LIJO JOSE
NCAMEEE045	LINEKAR V.J
NCAMEEE046	LINI JOYS
NCAMEEE047	MADHAVI M.K
NCAMEEE048	MANUKRISHNAN K.V
NCAMEEE049	YATHISHAN D
NCAMEEE050	ABDUL ROUF M
NCAMEEE051	ANJU V
NCAMEEE052	MITHUNA M
NCAMEEE053	MOHAMMED ALI SHIHAB
NCAMEEE054	MOHAMMED JASIM V
NCAMEEE055	MOHAMMED RAFEEQ U
NCAMEEE056	MUHAMMED JAISAL K.M
NCAMEEE057	MUHAMMED NASEEM C
NCAMEEE058	MUHAMMED SHAMEEM P.E
NCAMEEE059	MURALI KRISHNAN
NCAMEEE060	NABEEL A.A
NCAMEEE061	NABEEL KOCHUBAVA
NCAMEEE062	NAFSAL AHAMMED
NCAMEEE063	NAMITHA N.K
NCAMEEE064	NEENA MATHEW P
NCAMEEE065	NEETHU J MENON
NCAMEEE066	NIDHI MOHANDAS
NCAMEEE067	NIDHIN U
NCAMEEE068	NIRANJANA P.G
NCAMEEE069	PAVITHRA K.N
NCAMEEE070	PRASAD C.M
NCAMEEE071	PRASUTHA T PRASAD
NCAMEEE072	PRATHAP KUMAR C
NCAMEEE073	PRAVEEN DAS H
NCAMEEE074	PREM SAGAR V.P
NCAMEEE075	RAKENDU V.S
NCAMEEE076	RESHMA M
NCAMEEE077	RESHMI KRISHNA V
NCAMEEE078	RILINI RAJ O.P
NCAMEEE079	RIJO RAJAN
NCAMEEE080	RIYAS K.M



**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Panipady, Thiruvilwamala, Thiruvananthapuram Dt  
Pin 680 597 Kerala

NCAMEEE081	ROBINS V ANTONY
NCAMEEE082	SAJJAD HANEEF PM
NCAMEEE083	SANGEETH BALU K
NCAMEEE084	SANGEETHA GOPAKUMAR
NCAMEEE085	SARANYA SHEETAL N
NCAMEEE086	SAROJA P
NCAMEEE087	SHEMIL K.T
NCAMEEE088	SHIJIN RAMESH
NCAMEEE089	SHILPA V
NCAMEEE090	SHINCY MOL.K
NCAMEEE091	SHYAM S
NCAMEEE092	SMRITHI V
NCAMEEE093	SREEHARI D
NCAMEEE094	SREELAKSHMI SHAJITH
NCAMEEE095	SREELAKSHMI.SURESH
NCAMEEE096	SREENATH NAMBOOTHIRIPAD K.M
NCAMEEE097	SREERAJ K
NCAMEEE098	SRIRAM S
NCAMEEE099	TINTU JOSEPH
NCAMEEE100	VIGNESH B MENON
NCAMEEE101	VIGNESWARAN A.R
NCAMEEE102	VISHNU G
NCAMEEE103	VISHNU K.S
NCAMEEE104	VISHNU M
NCAMEEE105	VISHNUPRIYA P
NCAMEEE106	VIVEK M
NCAMEEE107	ANIRUDH MENON



*P. Anuram*  
Course Coordinator

*sd*

*sd*  
HoD


# NEHRU COLLEGE OF ENGINEERING & RESEARCH CENTRE

Pampady, Thiruvilwamala, Thrissur Dt.

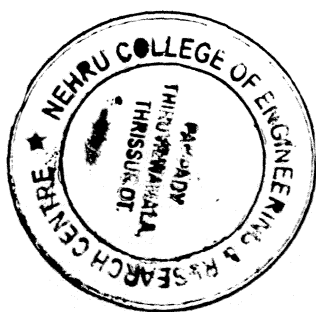
## POWER ELECTRONICS SIMULATION USING MATLAB

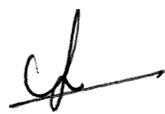
### SYLLABUS

Lecture Modules	POWER ELECTRONICS SIMULATION USING MATLAB
1	Introduction to Power Electronics
2	Simulation of Power Electronic Components
3	Introduction to MATLAB
4	Steps of simulation using MATLAB
5	MATLAB Simulation-FUTURE PROSPECTS
6	Simulation Exercise using MATLAB

  
Course Coordinator

  
HoD



  
**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thrissur Dt  
Pin 686 597 Kerala

**NEHRU COLLEGE OF ENGINEERING & RESEARCH CENTRE**

**Pampady, Thiruvilwamala, Thrissur Dt.**

**ELECTRICAL AND ELECTRONICS DEPARTMENT**

**NOTICE**

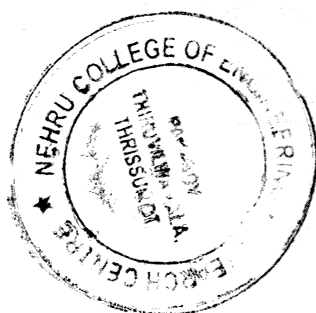
**12.06.2014**

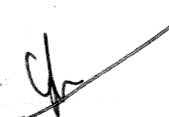
Department has decided to conduct a certificate course on **“Power Electronics simulation using MATLAB “** on second and fourth Saturdays during this academic year 2014-15. The duration of the course will be for a period of 30 hours. The objective of the course is to impart knowledge on latest developments in power trains. This course will act as a key for enhancing know how of students on power trains and for future career opportunities in field of electric vehicles

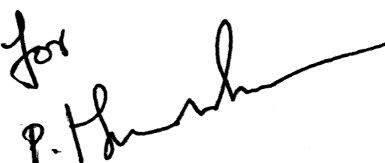
The 2012-16 batch admissions(UG) of EEE department are eligible for this course. All concerned students should attend the entire course without fail. Attendance is compulsory.

Copy:

- 1.Department Notice Board
- 2.Staff advisors(For Information to students)
- 3.Office file



  
**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala, Thrissur Dt  
Pin 680 597 Kerala

for  
  
HOL

FROM,

SUNDARAMOORTHY P & GREESHMA C S

ASSISTANT PROFESSOR,

EEE DEPARTMENT,

NCERC,

PAMPADY

TO,

THE PRINCIPAL, (THROUGH HOD)

EEE DEPARTMENT,

NCERC,

PAMPADY

Sir,

SUB: Requisition for conducting certificate course on "Power Electronics simulation using MATLAB"-Reg.

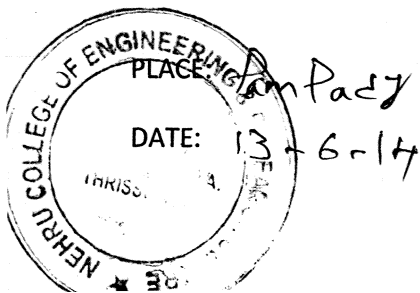
REF: Office circular No NCERC/3128/F/AC/12/14 dt.12-06-2014

We would like to request your support and permission to conduct a certificate course on "Power Electronics simulation using MATLAB " on second and fourth Saturdays during this academic year 2014-15. The duration of the course will be for a period of 30 hours. The objective of the course is to impart knowledge on latest developments in power trains. This course will act as a key for enhancing know how of students on power trains and for future career opportunities in field of electric vehicles

The 2012-16 batch admissions(UG) of EEE department are eligible for this course.

So, We kindly request you to provide the permission for doing this certificate course.

Thank you for your consideration. We look forward for your response soon.



*Forwarded & Recommended*  
*Asw...*

Your's sincerely,  
*P. Sundaramoorthy P*  
SUNDARAMOORTHY P  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thrissur Dt  
Pin 680 597 Kerala






*C/S*

**NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE**  
**PAMPADY, THIRUVILWAMALA, THRISSUR DIST.**

MINUTES OF DEPARTMENT ADVISORY COMMITTEE MEETING HELD ON 11/06/2014

A meeting of the Department Advisory Committee (DAC) was held on 11<sup>th</sup> June 2014 at 10:00 AM in the chamber of HoD, EEE department.

The following members were present:

1. Dr. P.N Ramachandran-HoD, EEE Dept. 
2. Mr. Anoop Kumar M.V-Assistant Professor, EEE Dept. 
3. Mr. Sundaramoorthi P-Assistant Professor, EEE Dept. 
4. Ms. Greeshma C.S-Assistant Professor, EEE Dept. 
5. Mr. Maheswaran K-Assistant Professor, EEE Dept. 

The following decisions were taken:

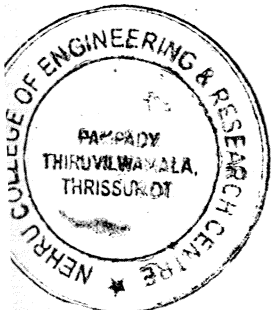
1. It was decided to conduct a certificate course on "POWER ELECTRONIC SIMULATION USING MATLAB" during the second and fourth Saturdays of the academic year 2014-15 for a period of 30 hours.
2. The course will enhance the knowledge level of students in simulation of power electronic circuits using MATLAB software.
3. It was decided to provide the course for 2012-16 batch UG students.
4. Also, It was decided to conduct a certificate course on "ELECTRIC VEHICLE (FUTURE MOBILITY)" during the second and fourth Saturdays of the academic year 2014-15 for a period of 30 hours.
5. The course will enhance the knowledge level of students related to future mobility of Electric Vehicles(EV).
6. It was decided to provide the course for 2013-17 batch UG students.
7. Also, it was decided to ensure compulsory attendance and staff advisors should monitor the same.

The meeting came to an end at 10:40 AM.

  
HoD

  
PRINCIPAL

Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thirssur Dt  
Pin 680 597 Kerala





**NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)**

(Approved by AICTE, Affiliated to University of Calicut and APJ Abdul Kalam Technological University, Kerala)



NCERC/Academic/201809/03/2018

From

Department of Electrical and Electronics Engineering

NCERC

To,

The Principal,

NCERC, Pampady

Dear Sir,

**Sub: Request to conduct a faculty training program in Induction Motor Optimization**

We are planning to organize a faculty training program in Induction Motor Optimization, for all faculties of NCERC on 17<sup>th</sup> of March 2018. We kindly request you to approve it. The resource person is Mr. Maheswaran K, an expert in Induction Motor.

Thanking You,

HoD,

EEE department.



**NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE**  
**(NAAC Accredited)**

(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)



# **Mechanical Engineering**

# DEPARTMENT OF MECHANICAL ENGINEERING, NCERC, PAMPADY

(NAAC Accredited)

## DEPARTMENT ADVISORY COMMITTEE MEETING MINUTES

**Venue:** Mechanical HoD Room






**Date:** 22/07/2016

**Time:** 1.00 pm

### Agenda:

- Introduction of certificate courses for the Academic Year 2016-17
- Any other matter

### Members Present


- Dr.S Sankar, HoD 
- Prof.K B Javvare Gowda, Professor 
- Mr. Sanoj T, Asst. Professor 
- Mr. Tedy Thomas, Asst. Professor 
- Mr. Rahul R, Asst. Professor 

### Minutes of the meeting:

- HoD welcomed the members of Department advisory committee to the meeting.
- It was decided to conduct a certificate course of 30 hour duration with an end course exam for all interested UG students in ME Dept.
- The course name and faculty handling the course was decided to be:  
**1. CAD THEORY AND PRACTICE- Mr. Tedy Thomas**
- HoD instructed the respective faculty to fix the dates of commencement of the course and get the permission from principal.

Meeting came to an end at 1.15pm.



  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady, Thrissur, Kerala  
Pin - 686 018, Kerala

From,

**Mr. Tedy Thomas**

Assistant Professor

Department Of Mechanical Engineering

Nehru College of Engineering and Research Centre

Pampady, Thrissur

To,

**The Principal**

Nehru College of Engineering and Research Centre

Pampady, Thrissur

Through HoD

Respected Sir,

**Sub: Permission to conduct certification courses during the academic year 2016-17-reg**

The Department of Mechanical Engineering is planning to conduct a 30 hour certification course on "CAD THEORY AND PRACTICE", scheduled during the months of August to September of this academic year 2016-17. The course is intended to be beneficial for students in their academics as well as professional life specially in the field of designing and therefore is offered to all B.Tech Mechanical Engineering students from 06/08/2016 onwards.

I humbly request you to kindly grant the permission for the same.

Thanking You

Place: Pampady

Date: 01/08/2016

Sincerely

Mr. Tedy Thomas



*Forwarded to Principal  
1 day  
01/08/16  
(Dr. S. Sankaran)*

*[Handwritten signature]*

*ch*

**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Pampady, Thrissur  
Ph: 016 492 44 44



**NEHRU COLLEGE OF ENGINEERING AND RESEARCH  
CENTRE  
(NAAC Accredited)**



(Approved by AICTE & Affiliated to University of Calicut and Kerala Technological University)

**DEPARTMENT OF MECHANICAL ENGINEERING**

**CIRCULAR**

**Date: 01/08/2016**

The Department of Mechanical Engineering is planning to conduct a 30 hour certification course on “**CAD THEORY AND PRACTICE**”, scheduled during the months of August to October of this academic year 2016-17. The course is intended to be beneficial for students in their academics as well as professional life and therefore is offered to all B.Tech Mechanical Engineering students from 06<sup>th</sup> August 2016 onwards. All students are hereby directed to enroll in the course mandatorily.

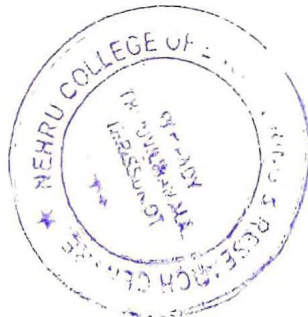
HoD,   
01/08/16

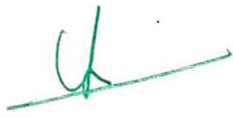
Department of Mechanical Engineering

Copy to,

**Department Notice Board**

**To be read in all classes**



  
**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Panipady Thiruvilwamala, Thiruvananthapuram Dt  
Pin - 680 597 Kerala



NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited, Affiliated to University of Calicut, Kerala Technological  
University)



DEPARTMENT OF MECHANICAL ENGINEERING

**CAD THEORY AND PRACTICE**

**Year: 2016-17**

**Duration: 30 Hours**

**Pre Requisites:**

Basic computer knowledge

**Syllabus:**

**MODULE 1:** Introduction To AUTOCAD: Starting AutoCAD, AutoCAD Screen Components, Drawing Area, Command Window, Navigation bar, Status bar, Invoking Commands in AutoCAD, Keyboard, Ribbon, Application Menu, Tool Palettes, Menu Bar, Toolbar, Shortcut Menu, AutoCAD Dialog Boxes, Starting a New Drawing, Open a Drawing, Start from Scratch, Use a Template, Closing a Drawing, Opening an Existing Drawing

**MODULE 2:** Getting Started With AUTOCAD: Dynamic Input Mode- Enable Pointer Input- Enable Dimension Input where possible- Drawing Lines in AutoCAD- Coordinate System- Starting With Advanced Sketching- Drawing Arcs, Drawing Rectangles, Drawing Ellipses, Drawing Regular Polygon, Drawing Polylines, Placing Points, Drawing Infinite Lines,

**MODULE 3:** Writing a Single Line Text: Editing Sketched Objects-Editing Sketches, Moving the Sketched Objects, Copying the Sketched Objects, Creating Multiple Copies , Creating a Single Copy, Offsetting Sketched Objects, Rotating Sketched Objects, Scaling the Sketched Objects, Filletting the Sketches, Chamfering the Sketches, Trimming the Sketched Objects, Extending the Sketched Objects, Stretching the Sketched Objects, Lengthening the Sketched Objects,

**MODULE 4:** Arraying the Sketched Objects: Basic Dimensioning, Geometric Dimensioning, And Tolerance, Need for Dimensioning, Dimensioning in AutoCAD, Fundamental Dimensioning Terms, Dimension Line , Dimension Text, Arrowheads, Extension Lines.

**MODULE 5:** Advanced Editing Commands: Trim and Extend, Fillet and Chamfer, Polyline Edit and Spline, Offset and Explode, Join, Inserting Blocks: The Insert Block Command, Inserting Blocks with Tool Palettes, Dynamic Blocks Migrating Blocks and other Elements between Drawings with Design Center

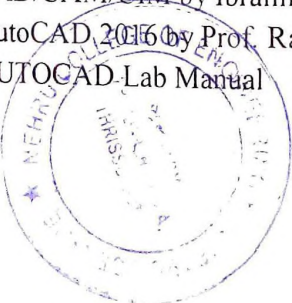
**Course Outcome:**

Student successfully completing the course will be able to

1. Create, annotate, edit and plot drawings using basic AutoCAD commands and features.
2. Apply basic AutoCAD skills to intermediate AutoCAD course and other design and drafting courses.

**References:**

1. CAD/CAM/CIM by Ibrahim Zied.
2. AutoCAD, 2016 by Prof. Rajendra Salokhe
3. AUTOCAD-Lab Manual



PRINCIPAL

Nehru College of  
Engineering and Research Centre  
Thiruvananthapuram  
Pin - 695 027

**NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE**  
(NAAC Accredited, Affiliated to University of Calicut, Kerala Technological University)

**DEPARTMENT OF MECHANICAL ENGINEERING**

**CAD THEORY AND PRACTICE**

<b>LECTURE PLAN</b>	
<b>TOPICS</b>	<b>DATE</b>
<b>MODULE 1</b>	
Introduction of AUTOCAD, Autocad screen components	06/08/2016
Drawing area, command window, navigation bar, status bar	06/08/2016
Keyboard, Ribbon, Application menu, Tool bar, short menu, Dialogue box	06/08/2016
Starting a new drawing, Open drawing, Start from scratch, Use template, Closing a drawing, Opening an existing drawing	06/08/2016
<b>MODULE 2</b>	
Dynamic input mode, Enable pointer input, Enable dimension input	8/20/2016
Drawing lines, coordinate system	8/20/2016
Drawing arc, rectangle, ellipse, poly lines	8/20/2016
Placing points, infinite lines	8/20/2016
<b>MODULE 3</b>	
Writing single line text, editing, moving, creating sketched object	03/09/2016
Creating copies, Offsetting, rotating, scaling object	03/09/2016
Filleting, chamfering, Extending sketched objects	03/09/2016
Trimming, lengthening the sketched objects	03/09/2016
<b>MODULE 4</b>	
Array the sketched object, Basic dimensioning	01/10/2016
Geometric dimensioning and tolerance	01/10/2016
need for dimensioning, Fundamental terms	01/10/2016
Dimensional line, text, Arrow head	01/10/2016
<b>MODULE 5</b>	
Advanced editing command, Trim and extend, fillet and chamfer	10/15/2016
Polyline edit, spline, offset and explode, join	10/15/2016
Inserting block command, Inserting block with tool palettes	10/15/2016
Dynamic block, migrating block, Other elements between drawings with design center	10/15/2016
<b>End Course Examination</b>	10/17/2016



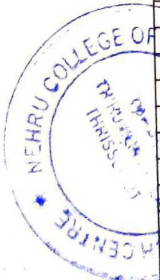
*Handwritten signature in green ink.*

**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
P.O. Pambayal, Ponnambalathur,  
Pin - 680 597, Kerala

**NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE, PAMPADY, THRISSUR**  
**DEPARTMENT OF MECHANICAL ENGINEERING**  
**ENROLLMENT LIST**

COURSE NAME: CAD THEORY AND PRACTICE  
 ACADEMIC YEAR: 2016-17  
 PROGRAM COORDINATOR: Mr.TEDY THOMAS

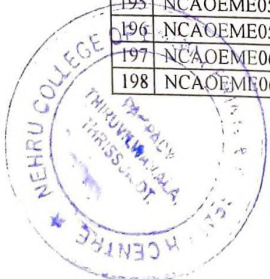
Sl. No	Reg No	Name	Sl. No	Reg No	Name
1	NCANEME001	AABIND KRISHNA K	68	NCANEME065	JUNAID C
2	NCANEME002	ABDUL RASHID P A	69	NCANEME066	KARTHIK U
3	NCANEME003	ABHAI DEV AMBOOKEN	70	NCANEME067	KIRAN B
4	NCANEME004	ABIJITH G	71	NCANEME132	KIRAN P S
5	NCANEME128	ABIJITH U	72	NCANEME069	MANJESH M NAIR
6	NCANEME005	ADHITH SIVADAS	73	NCANEME070	MIDHUN REJI M
7	NCANEME006	ADHVAITH G	74	NCANEME071	MIDHUN S NARAYANAN
8	NCANEME007	ADITH NAIR	75	NCANEME072	MOHAMMAD JASEEL K
9	NCANEME008	ADWAITH KT	76	NCANEME073	MOHAMMED NIZAM C
10	NCANEME009	AJAY P U	77	NCANEME074	MUHAMMED ASHIQUE A.K
11	NCANEME010	AJIL ABRAHAM	78	NCANEME075	MUHAMMED FAZIL K M
12	NCANEME011	AJO ABRAHAM	79	NCANEME076	NAZIM K SHAJAHAN
13	NCANEME012	AKHIL A.M	80	NCANEME077	NIDESH NELLANI
14	NCANEME013	AKHIL T	81	NCANEME078	NIHAS M H
15	NCANEME014	AKHIL V	82	NCANEME079	NISAR AHAMMED P
16	NCANEME015	AKSHAI K.B	83	NCANEME080	NITHIN MENON
17	NCANEME016	AKSHAY ARAVIND A	84	NCANEME081	NITHIN MOHAN
18	NCANEME017	AKSHAY KUMAR B	85	NCANEME082	NITHIN V
19	NCANEME019	AMIRSUHAIL P.V	86	NCANEME083	PRANAV K J
20	NCANEME020	ANAND K.V	87	NCANEME084	PRAVEEN D
21	NCANEME021	ANANTHAKRISHNAN NAIR A	88	NCANEME085	RAHUL G SATHYAN
22	NCANEME022	ANIRUDH T J	89	NCANEME086	RAKESH K
23	NCANEME023	ANISH N	90	NCANEME087	RAKESH KRISHNA
24	NCANEME024	ANOOP K	91	NCANEME088	RAMESH K K
25	NCANEME026	ANOOP RAJ A	92	NCANEME089	RANJITH P D
26	NCANEME025	ANOOPKUMAR K	93	NCANEME139	RASHID MUHINUDHEEN
27	NCANEME027	ARJUN K	94	NCANEME090	REVANTH R
28	NCANEME029	ARJUN M	95	NCANEME091	RICHARD JOHNSON
29	NCANEME030	ARUN S	96	NCANEME092	RITHIN K RAJAN
30	NCANEME031	ASHOK KALYAN P.M	97	NCANEME093	ROBBY K R
31	NCANEME032	ASWIN DAS D	98	NCANEME094	RUPEESH G
32	NCANEME033	ASWIN E	99	NCANEME140	SABARISH CHANDRAN
33	NCANEME034	ASWIN K K	100	NCANEME095	SACHIN PV
34	NCANEME035	ASWIN T	101	NCANEME096	SAIKRISHNA N
35	NCANEME036	ATHIRA RAJEEVAN	102	NCANEME097	SAJITH T R
36	NCANEME037	BAIJUMON A.R	103	NCANEME141	SAMRAN I T
37	NCANEME038	BASIL MARTIN	104	NCANEME142	SARATHKUMAR N.S
38	NCANEME039	BIJITH MOHAN K	105	NCANEME098	SATHYADEV D
39	NCANEME040	C M SREEKANTH	106	NCANEME099	SAYOOJ K P
40	NCANEME041	C P MUHAMMED FAYAS	107	NCANEME100	SHABEER AHAMED
41	NCANEME042	DANIEL P J	108	NCANEME133	SHAFIN MUHAMAD
42	NCANEME043	DEAN DAVIS A	109	NCANEME101	SHAH RUKH HASSAN
43	NCANEME044	DEEPAK G	110	NCANEME102	SHOBIN KRISHNA P
44	NCANEME129	DHANIL D	111	NCANEME134	SINU ANTO
45	NCANEME045	DHANUSH S PILLAI	112	NCANEME103	SOORAJ V
46	NCANEME046	DHEERAJ K	113	NCANEME104	SRAVAN K K
47	NCANEME047	DILTON JOY	114	NCANEME105	SREEKANTH P R
48	NCANEME048	DIXON P JOHNY	115	NCANEME106	SREEKUMAR V NAIR
49	NCANEME130	ELDHOSE K.K	116	NCANEME107	SREERAG P
50	NCANEME049	FAISAL K	117	NCANEME108	SREERAG P S
51	NCANEME137	FAWAZ K	118	NCANEME109	SREERAG T V
52	NCANEME050	GARREN SABU	119	NCANEME110	SREERAM C SEKHAR
53	NCANEME051	GILSON VARGHESE	120	NCANEME111	SUBINRAJ P S
54	NCANEME052	GOKUL PEETHAMBARAN NAIR	121	NCANEME112	SUHAIB K
55	NCANEME053	GOUTHAMAN P.R	122	NCANEME113	SURAJ BENNY
56	NCANEME054	HAMRAS B H	123	NCANEME114	SWATHY KIRAN
57	NCANEME131	HAREESH KUMAR P V	124	NCANEME115	SYAM P S
58	NCANEME055	HARIKRISHNAN KP	125	NCANEME116	SYED AJMAL
59	NCANEME138	IMRAN I.T	126	NCANEME136	VAISAK P.V
60	NCANEME056	JAFFAR MOHAMMED BASHEER	127	NCANEME118	VIDYARJUN K.S
61	NCANEME057	JAYASOORYA JAYARAM	128	NCANEME119	VIGNESH P C
62	NCANEME058	JESTIN JOHN	129	NCANEME120	VINEETH N
63	NCANEME060	JISHNU AJITHKUMAR NAIR	130	NCANEME121	VISAKH K
64	NCANEME061	JISHNU NARAYANAN	131	NCANEME122	VISHNU HARIDAS
65	NCANEME062	JITHIN KURIAN JOSEPH	132	NCANEME123	VISHNU MURALI A
66	NCANEME063	JITHIN P R	133	NCANEME124	VISHNU R KUMAR
67	NCANEME064	JOE BOBAN	134	NCANEME125	VISHNU R NATH




*(Handwritten signature)*

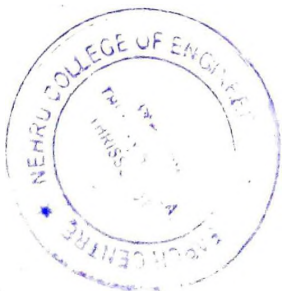
**PRINCIPAL**  
 Nehru College of Engineering and Research Centre  
 Pampady, Thrissur


Sl. No	Reg No	Name	Sl. No	Reg No	Name
135	NCAOEME001	AADITH K JAYARAJ	199	NCAOEME062	MUHAMMED SAJID
136	NCAOEME002	ABEEL ELIAS	200	NCAOEME063	NAIR VINAY SASIKUMAR
137	NCAOEME125	ABHILASH A	201	NCAOEME064	NAKUL A R
138	NCAOEME003	ABHILASH C	202	NCAOEME065	NANDAGOPAL V V
139	NCAOEME004	ABHILASH P MOHAN	203	NCAOEME066	NAVJENS
140	NCAOEME005	ACHUTH KAILAS F	204	NCAOEME067	NAZRUL AZLAM
141	NCAOEME006	ADARSH A	205	NCAOEME068	NIBIN LAL PT
142	NCAOEME007	ADARSH CHANDRA	206	NCAOEME069	NIDHIN MOHAN P
143	NCAOEME008	ADHARSH K T	207	NCAOEME070	NIKHIL J
144	NCAOEME009	ADITH VARMA M	208	NCAOEME071	NIKHIL M
145	NCAOEME010	AJAY SEKHAR	209	NCAOEME073	PRAKHIL P
146	NCAOEME126	AJITH P BABU	210	NCAOEME074	RAHUL M
147	NCAOEME011	AKHIL KRISHNAN M.A	211	NCAOEME075	RAHUL MURALI P
148	NCAOEME012	AKSHAY MOHANDAS	212	NCAOEME076	RAJITH MR
149	NCAOEME013	AKSHAY P	213	NCAOEME077	RAKESH P.R
150	NCAOEME014	AKSHAY SANTHOSH	214	NCAOEME078	RAMACHANDRAN S
151	NCAOEME072	AKSHAYDAS NP	215	NCAOEME079	RAMDAS M
152	NCAOEME016	AMAL SANKAR T S	216	NCAOEME080	RAMSHEER P
153	NCAOEME017	AMEER SUHAIL	217	NCAOEME081	RANJI R
154	NCAOEME018	AMRITHEESH M	218	NCAOEME082	RANJISH K
155	NCAOEME019	ANEESH KRISHNAN P	219	NCAOEME083	RIJAS S
156	NCAOEME020	ANSAR S	220	NCAOEME084	ROHIT S THATTIL
157	NCAOEME021	ANWAR P A	221	NCAOEME085	ROSHIN K.H
158	NCAOEME022	ARAVIND M.U	222	NCAOEME086	SAANU SADANAND
159	NCAOEME023	ARJUN A.S	223	NCAOEME087	SACHINDEV V
160	NCAOEME133	ARJUNLAL A.C	224	NCAOEME088	SAJEEV A S
161	NCAOEME024	ARSHAQ K S	225	NCAOEME089	SAJITH S
162	NCAOEME025	ARUN GOPINATHAN K	226	NCAOEME090	SANDEEP KUMAR K P
163	NCAOEME026	ARUN K	227	NCAOEME091	SANEESH M
164	NCAOEME027	ARUN S	228	NCAOEME092	SANGEETH NARAYAN B
165	NCAOEME028	ASHIK MOHAN	229	NCAOEME093	SANJAY C
166	NCAOEME029	ASHWIN NAIR	230	NCAOEME094	SANJAY P.M
167	NCAOEME030	ASWAN KRISHNA R	231	NCAOEME095	SARATH ARAVIND S
168	NCAOEME032	ATHUL T.S	232	NCAOEME096	SARATH C
169	NCAOEME033	BARATH M	233	NCAOEME097	SATHEESH R
170	NCAOEME034	BIJU P.M	234	NCAOEME098	SHARATH JAYAKRISHNAN
171	NCAOEME035	BIMAL BAIJU C	235	NCAOEME128	SHOYAB MOHAMED SHELLY
172	NCAOEME036	DEVNATH C.D	236	NCAOEME099	SHRAVAN K
173	NCAOEME037	DHANEESH KRISHNAN	237	NCAOEME100	SIDDHARTH G S
174	NCAOEME038	DILEEP M	238	NCAOEME101	SOORAJ BHASKARAN
175	NCAOEME039	GANESH S	239	NCAOEME102	SOORYAJITH
176	NCAOEME040	GOKUL P MENON	240	NCAOEME129	SREEJITH K
177	NCAOEME132	JIBIN C.K	241	NCAOEME103	SREEJITH K P
178	NCAOEME041	JISHNU MADHAVAN	242	NCAOEME104	SREEJITH S DEVAN
179	NCAOEME042	JITHIN KRISHNA A.P	243	NCAOEME105	SREERAG M
180	NCAOEME043	JITTO GEORGE	244	NCAOEME106	SREERAG S
181	NCAOEME044	KINAYATH SACHIN MENON	245	NCAOEME108	SUBIN D STEPHEN
182	NCAOEME046	KIRAN KRISHNA P.S	246	NCAOEME109	SUHAIL K.M
183	NCAOEME045	KIRANDAS PR	247	NCAOEME110	SYAMJITH K
184	NCAOEME047	KISHAN S MOHAN	248	NCAOEME131	TINUKRISHNAN P
185	NCAOEME048	LINTO T PALAYOOR	249	NCAOEME121	VARUN SWAMY V
186	NCAOEME127	MANOJ K P	250	NCAOEME112	VJESH M V
187	NCAOEME049	MANSUR K M	251	NCAOEME130	VINEETH VARIYAR
188	NCAOEME050	MIDHUN A	252	NCAOEME113	VIPUL VISWANATHAN
189	NCAOEME051	MIDHUN M	253	NCAOEME114	VISAL P
190	NCAOEME052	MINHAJ P	254	NCAOEME115	VISHNU BHASKAR R
191	NCAOEME053	MOHAMED SAFEER C	255	NCAOEME116	VISHNU M
192	NCAOEME054	MOHAMMED NIBIL P.K	256	NCAOEME117	VISHNU SHANKAR
193	NCAOEME055	MOHAMMED RIFAD	257	NCAOEME118	VISHNU T.G
194	NCAOEME056	MOHAMMED RISAL	258	NCAOEME119	VIVEK SANKAR P
195	NCAOEME057	MOHAMMED SALIH N.P	259	NCAOEME120	VIVEK V NAIR
196	NCAOEME058	MOHAMMED SHIBIN P	260	NCAOEME122	VYSHAK K
197	NCAOEME060	MUHAMMED ANSAR E	261	NCAOEME123	YADHUKRISHNA A
198	NCAOEME061	MUHAMMED FAYAS K C	262	NCAOEME124	YADUKRISHNAN V



  
**PRINCIPAL**  
 Nehru College of  
 Engineering and Research Centre  
 Panpady, Thrissur, Kerala  
 Ph: 0430 207 8120

Sl. No	Reg No	Name	Sl. No	Reg No	Name
263	NCE15ME001	ABDUL LATHEEF A	329	NCE15ME065	MELVIN JOHNSON
264	NCE15ME002	ABDULLA S	329	NCE15ME066	MITHUN GOPINATH
265	NCE15ME003	ABEJITH D	334	NCE15ME067	MOHAMMED JASIL C
266	NCE15ME004	ABHIJITH P	338	NCE15ME068	MOHAMMED SAFARULLA H
267	NCE15ME005	ABHIJITH V NAIR	326	NCE15ME069	MUHAMMED KUNHI M P
268	NCE15ME006	ABHISHEK SUNIL	327	NCE15ME070	NAJMAL K JAMAL
269	NCE15ME008	ADVAIDH H	325	NCE15ME071	NANDAGOPAN K S
270	NCE15ME009	AJITH C	329	NCE15ME073	NIJIL C R
271	NCE15ME010	AJITH K A	330	NCE15ME074	NITHIN A M
272	NCE15ME080	AJITH P V	331	NCE15ME075	NITHIN K P
273	NCE15ME012	AJMAL P	332	NCE15ME076	NITHIN R K
274	NCE15ME013	AKHIL M	333	NCE15ME079	NOUSHAD C N
275	NCE15ME014	AKHIL MOHAN	331	NCE15ME081	PRAJITH T
276	NCE15ME015	AKHIL P	334	NCE15ME083	RAHUL K R
277	NCE15ME017	AMOGHKRISHNAN	336	NCE15ME082	RAHUL K R
278	NCE15ME018	ANAND C O	337	NCE15ME084	RAMSHID S M
279	NCE15ME019	ANAND MOHAN	333	NCE15ME085	RENJITH N P
280	NCE15ME020	ANANTH THILAK K V	339	NCE15ME086	RIDHINJITH M P
281	NCE15ME023	ANIRUDH JAYAKUMAR K	340	NCE15ME087	ROBIN RAPPAI
282	NCE15ME024	ANIRUDH M R	341	NCE15ME089	ROHITH KRISHNAN R
283	NCE15ME022	ANIRUDH S NAIR	342	NCE15ME090	ROJAN V THANJAN
284	NCE15ME027	ARJUN PADMANABAN	343	NCE15ME091	ROSHAN AHAMED N A
285	NCE15ME025	ARJUN PURATHENDERRI	346	NCE15ME092	SABIQ ZAYAN S
286	NCE15ME028	ASRITH K V	345	NCE15ME093	SACHIN DAS
287	NCE15ME030	ATHUL DAS C H	346	NCE15ME094	SAHAL T
288	NCE15ME029	ATHUL K	347	NCE15ME095	SAIKRISHNA K B
289	NCE15ME031	BASSIM A	348	NCE15ME097	SANAL V CYRIAC
290	LNCE15ME127	BHARADWAJ R GOVIND	349	NCE15ME098	SANDEEP D
291	NCE15ME032	BIBIN M	350	NCE15ME101	SAURAV P S
292	NCE15ME033	D VIPIN DAS	351	NCE15ME105	SHRAVAN GOPAL
293	NCE15ME034	DHANESH T	352	NCE15ME108	SREEJITH S
294	NCE15ME035	DHANITH A V	353	NCE15ME109	SREEJITH V K
295	NCE15ME036	DHEERAJ V K	354	NCE15ME110	SREEKANTH K
296	NCE15ME037	DIVYA MOHAN	355	NCE15ME112	SREERAG A G
297	NCE15ME038	FARHAN T	356	NCE15ME113	SREERAG K
298	NCE15ME039	GEETHIKA ASHOK	357	NCE15ME114	SREERAG P V
299	NCE15ME040	GIRISH K M	358	NCE15ME115	SUDHEESH C
300	NCE15ME041	GOUTHAM C	359	NCE15ME118	SURABISH V S
301	NCE15ME042	GOVIND M	360	NCE15ME119	VAISHNAV V
302	NCE15ME043	HABEEB N	361	NCE15ME120	VISHAGH V
303	NCE15ME044	HAFIS M	362	NCE15ME121	VISHNU K N
304	NCE15ME045	HARIKRISHNAN S	363	NCE15ME122	VISHNU PRABHAKARAN
305	LNCE15ME128	HARIKRISHNAN V	364	NCE15ME123	VISWAJITH S NAIR
306	NCE15ME046	HARIRAM V	365	NCE15ME124	VYSAGH V
307	NCE15ME048	HASHEL O	366	NCE15ME125	VYSAKH P
308	NCE15ME049	JAIS TOM SAJI V	367	-	JITHIN P J
309	NCE15ME050	JAMES JAMES	368	-	SUDHEER G
310	NCE15ME051	JINO KURIAKOSE	369	-	ABINAV V
311	NCE15ME052	JITHIN C R	370	-	AJAY KRISHNA J
312	NCE15ME053	JOVIN AUGUSTIAN MATHEW	371	-	AJMAL NIZAM
313	NCE15ME054	KAMIL MOHAMED A	372	-	AJAY P
314	NCE15ME055	KARTHIK K	373	-	ARJUN U
315	NCE15ME057	KIRAN R NAIR	374	-	ARUN KRISHNA G
316	NCE15ME058	KRISHNA PRASAD T M	375	-	ASWIN A S
317	LNCE15ME129	KRISHNA RAJ	376	-	ATHUL M
318	NCE15ME059	LINOL P LORANCE	377	-	EELPAK P P
319	NCE15ME062	MAHMOOD ABOOBACKER P K	378	-	DHANESH K
320	NCE15ME063	MANISH MOHAN	379	-	FAZIL MOHAMMED
321	NCE15ME064	MANJUNATH A	380	-	JINTO THIMOTHY



  
**PRINCIPAL**  
 Nehru College of  
 Engineering and Research Centre  
 in paddy Thiruvalluramala, Thiruvallur Dt  
 Pin - 630 597, Kerala

Sl. No	Reg No	Name
381	-	LAHASHAD C A
382	-	MIDHUN RAJ K
383	-	MUHAMMED ANEES
384	-	MUHAMMED HASEEBUSSAMAN
385	-	RAHUL R
386	-	SHALIF P S
387	-	SHJO JOSHY
388	-	SHYAS M
389	-	SHYAM M A
390	-	SREEHARI MADHU
391	-	SREEHARI UNNIKRISHNAN
392	-	VINEETH N V
393	-	PAUL JIMS
394	-	PRAJITH P
395	-	PRATHEEV KUMAR K
396	-	R ADHARSH
397	-	RAFEEK T S
398	-	SARATH V P
399	-	SAYUJ M J
400	-	SOORAJ SIVADASAN

*Dr. Tedy Thomas*  
PROGRAM COORDINATOR



*[Signature]*  
PRINCIPAL

Nehru College of  
Engineering and Research Centre  
Panapady Thiruvilwamala, Thiruvananthapuram Dt  
Pin 680 597 Kerala

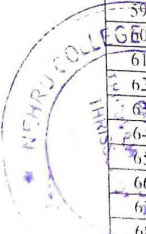




**NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE, PAMPADY, THIRISSUR**  
**DEPARTMENT OF MECHANICAL ENGINEERING**  
**ATTENDANCE REGISTER**

YEAR: 2016-17  
 COURSE: CAD THEORY AND PRACTICE  
 PROGRAM COORDINATOR: Mr. TEDY THOMAS

Sl. No	Reg No	Name	DATES																				
			06/08	07/08	08/08	09/08	10/08	11/08	12/08	13/08	14/08	15/08	16/08	17/08									
1	NCAOEME001	AADITH K JAYARAJ	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
2	NCAOEME002	ABEL ELIAS	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
3	NCAOEME125	ABHIJITH A	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
4	NCAOEME003	ABHIR ASH C	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
5	NCAOEME004	ABHILASH P MOHAN	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
6	NCAOEME005	ACHUTH KAILAS E	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
7	NCAOEME006	ADARSH A	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
8	NCAOEME007	ADARSH CHANDRA	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
9	NCAOEME008	ADHARSH K T	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
10	NCAOEME009	ADITH VARMA M	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
11	NCAOEME010	AJAY SEKHAR	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
12	NCAOEME126	AJITH P BABU	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
13	NCAOEME011	AKHIL KRISHNAN M.A	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
14	NCAOEME012	AKSHAY MOHANDAS	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
15	NCAOEME013	AKSHAY P	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
16	NCAOEME014	AKSHAY SANTHOSH	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
17	NCAOEME072	AKSHAYDAS NP	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
18	NCAOEME016	AMAL SANKAR T S	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
19	NCAOEME017	AMEER SUHAIL	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
20	NCAOEME018	AMRITESH M	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
21	NCAOEME019	ANEESH KRISHNAN P	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
22	NCAOEME020	ANSAR S	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
23	NCAOEME021	ANWAR P A	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
24	NCAOEME022	ARAVIND M.U	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
25	NCAOEME023	ARJUN A.S	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
26	NCAOEME133	ARJUNLAL A.C	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
27	NCAOEME024	ARSHAQ K S	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
28	NCAOEME025	ARUN GOPINATHAN K	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
29	NCAOEME026	ARUN K	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
30	NCAOEME027	ARUN S	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
31	NCAOEME028	ASHIK MOHAN	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
32	NCAOEME029	ASHWIN NAIR	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
33	NCAOEME030	ASWAN KRISHNA R	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
34	NCAOEME032	ATHUL T.S	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
35	NCAOEME033	BARATH M	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
36	NCAOEME034	BIJU P.M	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
37	NCAOEME035	BIMAL BAIJU C	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
38	NCAOEME036	DEVNATH C.D	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
39	NCAOEME037	DHANEESH KRISHNAN	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
40	NCAOEME038	DILEEP M	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
41	NCAOEME039	GANESH S	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
42	NCAOEME040	GOKUL P MENON	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
43	NCAOEME132	JIBIN C.K	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
44	NCAOEME041	JISHNU MADHAVAN	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
45	NCAOEME042	JITHIN KRISHNA A.P	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
46	NCAOEME043	JITTO GEORGE	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
47	NCAOEME044	KINAYATH SACHIN MENON	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
48	NCAOEME046	KIRAN KRISHNA P.S	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
49	NCAOEME045	KIRANDAS PR	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
50	NCAOEME047	KISHAN S MOHAN	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
51	NCAOEME048	LINTO T PALAYOOR	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
52	NCAOEME127	MANOJ K P	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
53	NCAOEME049	MANSUR K M	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
54	NCAOEME050	MIDHUN A	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
55	NCAOEME051	MIDHUN M	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
56	NCAOEME052	MINHAJ P	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
57	NCAOEME053	MOHAMMED SAJEER C	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
58	NCAOEME054	MOHAMMED NIBIL P.K	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
59	NCAOEME055	MOHAMMED RITAD	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
60	NCAOEME056	MOHAMMED RISAL	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
61	NCAOEME057	MOHAMMED SALIH N.P	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
62	NCAOEME058	MOHAMMED SHIBIN P	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
63	NCAOEME060	MUHAMMED ANSAR E	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
64	NCAOEME061	MUHAMMED FAYAS K C	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
65	NCAOEME062	MUHAMMED SAJID	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
66	NCAOEME063	NAIR VINAY SASIKUMAR	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
67	NCAOEME064	NAKUL A.R	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
68	NCAOEME065	NANDAGOPAL V V	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/



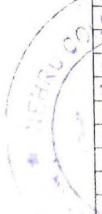
**PRINCIPAL**



**NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE, PAMPADY, THIRISSUR**  
**DEPARTMENT OF MECHANICAL ENGINEERING**  
**ATTENDANCE REGISTER**

YEAR: 2016-17  
 COURSE: CAD THEORY AND PRACTICE  
 PROGRAM COORDINATOR: Mr. TEDY THOMAS

Sl. No	Reg No	Name	DATES												
			06/08	20/08	03/09	01/10	15/10	17/10							
1	NCE15ME001	ABDUL LATHEEF A	/	/	/	/	/	/	/	/	/	/	/	/	/
2	NCE15ME002	ABDULAS	a	/	/	/	/	/	/	/	/	/	/	/	/
3	NCE15ME003	ABHIRAM D	/	/	/	/	/	/	/	/	/	/	/	/	/
4	NCE15ME004	ABHIRAM P	/	/	/	/	/	/	/	/	/	/	/	/	/
5	NCE15ME005	ABHIRAM NAIR	/	/	/	/	/	/	/	/	/	/	/	/	/
6	NCE15ME006	ABHIRAM SUNIL	/	/	/	/	/	/	/	/	/	/	/	/	/
7	NCE15ME008	ADY ADITHYAN	/	/	/	/	/	/	/	/	/	/	/	/	/
8	NCE15ME009	ADITHYAN	/	/	/	/	/	/	/	/	/	/	/	/	/
9	NCE15ME010	ADITHYAN	/	/	/	/	/	/	/	/	/	/	/	/	/
10	NCE15ME080	ADITHYAN P V	/	/	/	/	/	/	/	/	/	/	/	/	/
11	NCE15ME012	AJMAL P	/	/	/	/	/	/	/	/	/	/	/	/	/
12	NCE15ME013	AKHIL M	/	/	/	/	/	/	/	/	/	/	/	/	/
13	NCE15ME014	AKHIL MOHAN	/	/	/	/	/	/	/	/	/	/	/	/	/
14	NCE15ME015	AKHIL P	/	/	/	/	/	/	/	/	/	/	/	/	/
15	NCE15ME017	AMOGH KRISHNAN	/	/	/	/	/	/	/	/	/	/	/	/	/
16	NCE15ME018	ANAND CO	/	/	/	/	/	/	/	/	/	/	/	/	/
17	NCE15ME019	ANAND MOHAN	/	/	/	/	/	/	/	/	/	/	/	/	/
18	NCE15ME020	ANANTH THILAK K V	/	/	/	/	/	/	/	/	/	/	/	/	/
19	NCE15ME023	ANIRUDH JAYAKUMAR K	/	/	/	/	/	/	/	/	/	/	/	/	/
20	NCE15ME022	ANIRUDH M R	/	/	/	/	/	/	/	/	/	/	/	/	/
21	NCE15ME024	ANIRUDH S NAIR	/	/	/	/	/	/	/	/	/	/	/	/	/
22	NCE15ME027	ARJUN PADMANABAN	/	/	/	/	/	/	/	/	/	/	/	/	/
23	NCE15ME025	ARJUN PURATHENDERRI	/	/	/	/	/	/	/	/	/	/	/	/	/
24	NCE15ME028	ASRITH K V	/	/	/	/	/	/	/	/	/	/	/	/	/
25	NCE15ME030	ATHUL DAS CH	/	/	/	/	/	/	/	/	/	/	/	/	/
26	NCE15ME029	ATHUL K	/	/	/	/	/	/	/	/	/	/	/	/	/
27	NCE15ME031	BASSIM A	/	/	/	/	/	/	/	/	/	/	/	/	/
28	LNCE15ME127	BHARADWAJ R GOVIND	/	/	/	/	/	/	/	/	/	/	/	/	/
29	NCE15ME032	BIBIN M	/	/	/	/	/	/	/	/	/	/	/	/	/
30	NCE15ME033	D VIPIN DAS	/	/	/	/	/	/	/	/	/	/	/	/	/
31	NCE15ME034	DHANESH T	/	/	/	/	/	/	/	/	/	/	/	/	/
32	NCE15ME035	DHANITHA V	/	/	/	/	/	/	/	/	/	/	/	/	/
33	NCE15ME036	DHEERAJ V K	/	/	/	/	/	/	/	/	/	/	/	/	/
34	NCE15ME037	DIVYA MOHAN	/	/	/	/	/	/	/	/	/	/	/	/	/
35	NCE15ME038	FARHAN T	/	/	/	/	/	/	/	/	/	/	/	/	/
36	NCE15ME039	GEETHIKA ASHOK	/	/	/	/	/	/	/	/	/	/	/	/	/
37	NCE15ME040	GIRISH K M	/	/	/	/	/	/	/	/	/	/	/	/	/
38	NCE15ME041	GOUTHAM C	/	/	/	/	/	/	/	/	/	/	/	/	/
39	NCE15ME042	GOVIND M	/	/	/	/	/	/	/	/	/	/	/	/	/
40	NCE15ME043	HABEEB N	/	/	/	/	/	/	/	/	/	/	/	/	/
41	NCE15ME044	HAFIS M	/	/	/	/	/	/	/	/	/	/	/	/	/
42	NCE15ME045	HARIKRISHNAN S	/	/	/	/	/	/	/	/	/	/	/	/	/
43	LNCE15ME128	HARIKRISHNAN V	/	/	/	/	/	/	/	/	/	/	/	/	/
44	NCE15ME046	HARIRAM V	/	/	/	/	/	/	/	/	/	/	/	/	/
45	NCE15ME048	HASHEL O	/	/	/	/	/	/	/	/	/	/	/	/	/
46	NCE15ME049	JAI TOM SAJI V	/	/	/	/	/	/	/	/	/	/	/	/	/
47	NCE15ME050	JAMES JAMES	/	/	/	/	/	/	/	/	/	/	/	/	/
48	NCE15ME051	JINO KURIAKOSE	/	/	/	/	/	/	/	/	/	/	/	/	/
49	NCE15ME052	JITHIN C R	/	/	/	/	/	/	/	/	/	/	/	/	/
50	NCE15ME053	JOVIN AUGUSTIAN MATHEW	/	/	/	/	/	/	/	/	/	/	/	/	/
51	NCE15ME054	KAMIL MOHAMED ABOOBACKER	/	/	/	/	/	/	/	/	/	/	/	/	/
52	NCE15ME055	KARTHIK K	/	/	/	/	/	/	/	/	/	/	/	/	/
53	NCE15ME057	KIRAN R NAIR	/	/	/	/	/	/	/	/	/	/	/	/	/
54	NCE15ME058	KRISHNA PRASAD TM	/	/	/	/	/	/	/	/	/	/	/	/	/
55	LNCE15ME129	KRISHNA RAJ	/	/	/	/	/	/	/	/	/	/	/	/	/
56	NCE15ME059	LINOL P LORANCE	/	/	/	/	/	/	/	/	/	/	/	/	/
57	NCE15ME062	MAHMOOD ABOOBACKER P K	/	/	/	/	/	/	/	/	/	/	/	/	/
58	NCE15ME063	MANISH MOHAN	/	/	/	/	/	/	/	/	/	/	/	/	/
59	NCE15ME064	MANU NATHA	/	/	/	/	/	/	/	/	/	/	/	/	/
60	NCE15ME065	MILVIN JOHNSON	/	/	/	/	/	/	/	/	/	/	/	/	/
61	NCE15ME066	MITHUN GOPINATH	/	/	/	/	/	/	/	/	/	/	/	/	/
62	NCE15ME067	MOHAMMED JASIL C	/	/	/	/	/	/	/	/	/	/	/	/	/
63	NCE15ME068	MOHAMMED SALARULLAH	/	/	/	/	/	/	/	/	/	/	/	/	/
64	NCE15ME069	MUHAMMED KUNHIMP	/	/	/	/	/	/	/	/	/	/	/	/	/
65	NCE15ME070	NAJIM K JAMAL	/	/	/	/	/	/	/	/	/	/	/	/	/
66	NCE15ME071	NANDAGOPAN K S	/	/	/	/	/	/	/	/	/	/	/	/	/
67	NCE15ME073	NHIL C R	/	/	/	/	/	/	/	/	/	/	/	/	/
68	NCE15ME074	NITHIN AM	/	/	/	/	/	/	/	/	/	/	/	/	/
69	NCE15ME075	NITHIN K P	/	/	/	/	/	/	/	/	/	/	/	/	/
70	NCE15ME076	NITHIN R K	/	/	/	/	/	/	/	/	/	/	/	/	/
71	NCE15ME079	NOUSHAD C N	/	/	/	/	/	/	/	/	/	/	/	/	/
72	NCE15ME081	PRAVITH I	/	/	/	/	/	/	/	/	/	/	/	/	/
73	NCE15ME083	RAHIL K R	/	/	/	/	/	/	/	/	/	/	/	/	/
74	NCE15ME082	RAHIL K R	/	/	/	/	/	/	/	/	/	/	/	/	/
75	NCE15ME084	RAMSHID S M	/	/	/	/	/	/	/	/	/	/	/	/	/



✓

PRINCIPAL







NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE

(NAAC Accredited)

**DEPARTMENT OF MECHANICAL ENGINEERING**

END COURSE EXAMINATION

Course: **CAD THEORY AND PRACTICE**

Date: **15<sup>th</sup> Oct, 2016**

Total Marks: **50**

Total Duration: **1 hour**

- Put a tick towards the right answer.
- If multiple options are chosen for a question it will not be considered for evaluation.
- Attend all the questions.
- There will be no negative marking.

Name: \_\_\_\_\_

Register Number: \_\_\_\_\_

Semester/Year: \_\_\_\_\_

*Each question carries 2 marks*

**1. Physical verification tools in design process includes**

- a) circuit extractors
- b) textual entry
- c) graphical entry
- d) simulation

**2. Behavioral tools contains**

- a) graphical entry
- b) design check
- c) performance check
- d) simulation

**3. Simulators are available for**

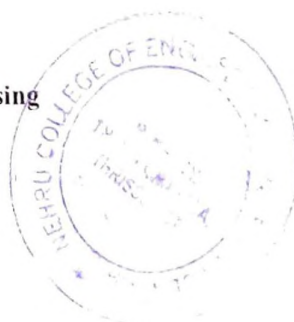
- a) transistor level logic
- b) switch level logic
- c) gate level logic
- d) design level logic

**4. Selection and placement is done using**

- a) cursor
- b) shapes
- c) textual
- d) graphical

**5. Cursor position is controlled using**

- a) mouse
- b) bitpad digitizer



*Handwritten signature in green ink*  
**PRINCIPAL**  
 Nehru College of  
 Engineering and Research Centre  
 Chennai, Tamil Nadu, India

c) mouse and bitpad digitizer

d) keyboard

6. CIF code is a \_\_\_\_\_ layout language

a) mask level

b) floor level

c) design level

d) transistor level

7. Which verification capture's the design intent and not physical layout?

a) mask level layout language

b) transistor level layout language

c) circuit description language

d) switch level layout language

8. All possible errors in mask layout can be eliminated after mask making proceeds.

a) true

b) false

9. The nature of physical layout verification software depends on

a) absolute design rules

b) fixed layout

c) virtual grid layout

d) all of the mentioned

10. Which is used to interpret physical layout in circuit terms?

a) circuit converter

b) layout converter

c) circuit extractor

d) layout extractor

11. \_\_\_\_\_ is a rectangular pattern of lines or dots which covers in the entire XY plane of user coordinate system.

a) Ortho

b) Grid

c) Snap

d) Tolerance

12. Which command converts discrete object in polyline?

a) Merge

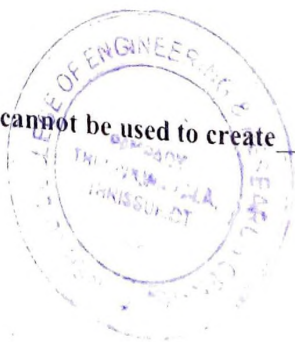
b) Union

c) Join

d) Add

13. The offset command cannot be used to create

a) Concentric circles



*Handwritten signature in green ink.*

PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Thiruvananthapuram, Thiruvananthapuram  
Pin - 695 591, Kerala

- b) Vertical straights
- c) Three parallel lines
- d) Parallel arcs

14. Which axis is not used when working in 2-D frame?

- a) Z-axis
- b) Y-axis
- c) X-axis
- d) WCS

15. What is the minimum allowable numbers of layers in a drawing?

- a) 0
- b) 1
- c) 2
- d) 10

16. Which is corresponded to zoom mouse wheel?

- a) Extend/all
- b) Zoom in/ Zoom out
- c) Pan and scan
- d) Scale

17. What setting gradient allows us to fill an open area?

- a) Gap
- b) Tolerance
- c) Transparency
- d) Open

18. Which of the following is not a unit of length measurement?

- a) Yards
- b) Parsecs
- c) Microns
- d) Grads

19. A straight line is the \_\_\_\_\_ distance between two points.

- a) shortest
- b) longest
- c) half
- d) infinite

20. A line is a geometric primitive that has no \_\_\_\_\_

- a) length
- b) point
- c) direction
- d) thickness



  
 PRINCIPAL  
 Government College of Engineering  
 Bangalore

21. A line may not be \_\_\_\_\_

- a) parallel to both the planes.
- b) parallel to one plane and perpendicular to the other
- c) parallel to one plane and inclined to the other
- d) perpendicular to both the planes

22. When a line is parallel to a plane, the projection of the line on to that plane will be its \_\_\_\_\_ length

- a) shortened
- b) true
- c) enlarged
- d) point

23. When the Projection of a line is parallel to both HP and VP its length will be \_\_\_\_\_

- a) shortened
- b) false
- c) enlarged
- d) true

24. In a case when a line is perpendicular to HP & parallel to VP then what figure will be projected on HP?

- a) Point
- b) Line
- c) Square
- d) Inclined line

25. If the apparent and the true inclinations of a line with HP are equal, the line is \_\_\_\_\_

- a) parallel to horizontal plane
- b) parallel to vertical plane
- c) parallel to profile plane
- d) inclined to both reference plane



*Ch*  
 PRINCIPAL  
 Nehru College of  
 Engineering and Research Centre  
 Thiruvananthapuram

# CAD THEORY AND PRACTICE

## ANSWER KEY

1. Answer: a
2. Answer: d
3. Answer: b
4. Answer: a
5. Answer: c
6. Answer: a
7. Answer: c
8. Answer: b
9. Answer: d
10. Answer: c
11. Answer: b
12. Answer: c
13. Answer: b
14. Answer: a
15. Answer: b
16. Answer: b
17. Answer: b
18. Answer: d
19. Answer: a
20. Answer: d
21. Answer: d
22. Answer: b
23. Answer: d
24. Answer: a
25. Answer: b



A handwritten signature in green ink, consisting of a stylized 'C' and 'A' followed by a long horizontal stroke.

**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Pampady, Thrissur, Kerala  
Pin - 686 597 Kerala



NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)



**DEPARTMENT OF MECHANICAL ENGINEERING**  
**END COURSE EXAMINATION**

Course: **CAD THEORY AND PRACTICE**

Date: **15<sup>th</sup> Oct, 2016**

Total Marks: **50**

Total Duration: **1 hour**

38/50

- Put a tick towards the right answer.
- If multiple options are chosen for a question it will not be considered for evaluation.
- Attend all the questions.
- There will be no negative marking.

Name: SUHAIB K

Register Number: NCANEMH12

Semester/Year: VII / IV

*Each question carries 2 marks*

**1. Physical verification tools in design process includes**

- a) circuit extractors
- b) textual entry
- c) graphical entry
- d) simulation

**2. Behavioral tools contains**

- a) graphical entry
- b) design check
- c) performance check
- d) simulation

**3. Simulators are available for**

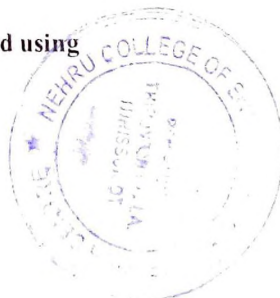
- a) transistor level logic
- b) switch level logic
- c) gate level logic
- d) design level logic

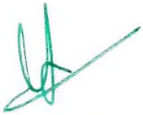
**4. Selection and placement is done using**

- a) cursor
- b) shapes
- c) textual
- d) graphical

**5. Cursor position is controlled using**

- a) mouse
- b) bitpad digitizer



  
PRINCIPAL  
Neeru College of  
Engineering and Research Centre  
Bapatla, Thiruvananthapuram, Kerala  
Pin: 566 501, India

- ~~c) mouse and bitpad digitizer~~
- d) keyboard

6. CIF code is a \_\_\_\_\_ layout language

- ~~a) mask level~~
- b) floor level
- c) design level
- d) transistor level

7. Which verification captures the design intent and not physical layout?

- a) mask level layout language
- b) transistor level layout language
- ~~c) circuit description language~~
- d) switch level layout language

8. All possible errors in mask layout can be eliminated after mask making proceeds.

- a) true
- ~~b) false~~

9. The nature of physical layout verification software depends on

- a) absolute design rules
- ~~b) fixed layout~~
- ~~c) virtual grid layout~~
- d) all of the mentioned

10. Which is used to interpret physical layout in circuit terms?

- a) circuit converter
- b) layout converter
- ~~c) circuit extractor~~
- d) layout extractor

11. \_\_\_\_\_ is a rectangular pattern of lines or dots which covers in the entire XY plane of user coordinate system.

- a) Ortho
- ~~b) Grid~~
- c) Snap
- d) Tolerance

12. Which command converts discrete object in polyline?

- a) Merge
- ~~b) Union~~
- ~~c) Join~~
- d) Add

13. The offset command cannot be used to create \_\_\_\_\_

- a) Concentric circles



~~U~~

**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Bapatla, Andhra Pradesh, India

- b) Vertical straights
- c) Three parallel lines
- d) Parallel arcs

14. Which axis is not used when working in 2-D frame?

- a) Z-axis
- b) Y-axis
- c) X-axis
- d) WCS

15. What is the minimum allowable numbers of layers in a drawing?

- a) 0
- b) 1
- c) 2
- d) 10

16. Which is corresponded to zoom mouse wheel?

- a) Extend/all
- b) Zoom in/ Zoom out
- c) Pan and scan
- d) Scale

17. What setting gradient allows us to fill an open area?

- a) Gap
- b) Tolerance
- c) Transparency
- d) Open



18. Which of the following is not a unit of length measurement?

- a) Yards
- b) Parsecs
- c) Microns
- d) Grads

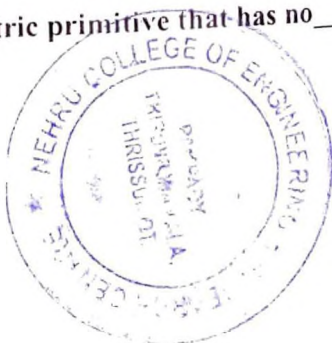
19. A straight line is the \_\_\_\_\_ distance between two points.

- a) shortest
- b) longest
- c) half
- d) infinite



20. A line is a geometric primitive that has no \_\_\_\_\_

- a) length
- b) point
- c) direction
- d) thickness



PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvananthapuram, Thiruvananthapuram  
Pin - 695 007, Kerala

21. A line may not be \_\_\_\_\_

- a) parallel to both the planes.
- b) parallel to one plane and perpendicular to the other
- c) parallel to one plane and inclined to the other
- d) perpendicular to both the planes

22. When a line is parallel to a plane, the projection of the line on to that plane will be its \_\_\_\_\_ length

- a) shortened
- b) true
- c) enlarged
- d) point

23. When the Projection of a line is parallel to both HP and VP its length will be \_\_\_\_\_

- a) shortened
- b) false
- c) enlarged
- d) true


24. In a case when a line is perpendicular to HP & parallel to VP then what figure will be projected on HP?

- a) Point
- b) Line
- c) Square
- d) Inclined line

25. If the apparent and the true inclinations of a line with HP are equal, the line is \_\_\_\_\_

- a) parallel to horizontal plane
- b) parallel to vertical plane
- c) parallel to profile plane
- d) inclined to both reference plane



  
 PRINCIPAL  
 Nehru College of  
 Engineering and Research Centre  
 Pampady, Thiruvananthapuram, Thiruvananthapuram  
 P.O. - 695 007, Kerala



NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)



**DEPARTMENT OF MECHANICAL ENGINEERING**  
END COURSE EXAMINATION

Course: CAD THEORY AND PRACTICE

Date: 15<sup>th</sup> Oct, 2016

Total Marks: 50

Total Duration: 1 hour

42/50

- Put a tick towards the right answer.
- If multiple options are chosen for a question it will not be considered for evaluation.
- Attend all the questions.
- There will be no negative marking.

Name: Aabind Krishna. K.

Register Number: NCANEME001

Semester/Year: VII/IV

*Each question carries 2 marks*

**1. Physical verification tools in design process includes**

- ~~a) circuit extractors~~
- b) textual entry
- c) graphical entry
- d) simulation

**2. Behavioral tools contains**

- a) graphical entry
- b) design check
- c) performance check
- ~~d) simulation~~

**3. Simulators are available for**

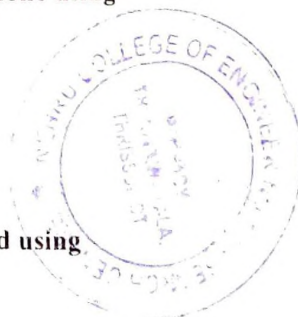
- a) transistor level logic
- ~~b) switch level logic~~
- c) gate level logic
- d) design level logic

**4. Selection and placement is done using**

- ~~a) cursor~~
- b) shapes
- c) textual
- d) graphical

**5. Cursor position is controlled using**

- a) mouse
- b) bitpad digitizer



*Handwritten signature in green ink*

PRINCIPAL  
Neeru College of  
Engineering and Research Centre

~~c) mouse and bitpad digitizer~~

d) keyboard

6. CIF code is a \_\_\_\_\_ layout language

~~a) mask level~~

b) floor level

c) design level

d) transistor level

7. Which verification captures the design intent and not physical layout?

a) mask level layout language

b) transistor level layout language

~~c) circuit description language~~

d) switch level layout language

8. All possible errors in mask layout can be eliminated after mask making proceeds.

a) true

~~b) false~~

9. The nature of physical layout verification software depends on

a) absolute design rules

b) fixed layout

c) virtual grid layout

~~d) all of the mentioned~~

10. Which is used to interpret physical layout in circuit terms?

a) circuit converter

b) layout converter

~~c) circuit extractor~~

d) layout extractor

11. \_\_\_\_\_ is a rectangular pattern of lines or dots which covers in the entire XY plane of user coordinate system.

a) Ortho

~~b) Grid~~

c) Snap

d) Tolerance

12. Which command converts discrete object in polyline?

a) Merge

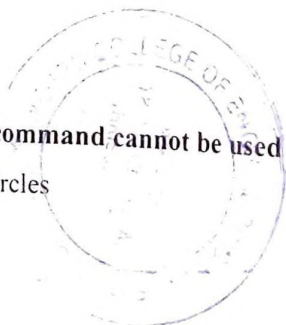
b) Union

~~c) Join~~

d) Add

13. The offset command cannot be used to create \_\_\_\_\_

a) Concentric circles



*(Handwritten signature)*

PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Durgam Cheruvu, Hyderabad  
Ph: 66 697 1645

- b) Vertical straights
- c) Three parallel lines
- d) Parallel arcs

14. Which axis is not used when working in 2-D frame?

- a) Z-axis
- b) Y-axis
- c) X-axis
- d) WCS

15. What is the minimum allowable numbers of layers in a drawing?

- a) 0
- b) 1
- c) 2
- d) 10

16. Which is corresponded to zoom mouse wheel?

- a) Extend/all
- b) Zoom in/ Zoom out
- c) Pan and scan
- d) Scale

17. What setting gradient allows us to fill an open area?

- a) Gap
- b) Tolerance
- c) Transparency
- d) Open

18. Which of the following is not a unit of length measurement?

- a) Yards
- b) Parsecs
- c) Microns
- d) Grads

19. A straight line is the \_\_\_\_\_ distance between two points.

- a) shortest
- b) longest
- c) half
- d) infinite

20. A line is a geometric primitive that has no \_\_\_\_\_

- a) length
- b) point
- c) direction
- d) thickness



  
 PRINCIPAL  
 Nehru College of  
 Engineering and Research Centre  
 University of Applied Sciences, Mumbai  
 P. O. Box No. 1, Kurla

21. A line may not be \_\_\_\_\_

- a) parallel to both the planes.
- b) parallel to one plane and perpendicular to the other
- c) parallel to one plane and inclined to the other
- ~~d) perpendicular to both the planes~~

22. When a line is parallel to a plane, the projection of the line on to that plane will be its \_\_\_\_\_ length

- ~~a) shortened~~
- b) true
- c) enlarged
- d) point



23. When the Projection of a line is parallel to both HP and VP its length will be \_\_\_\_\_

- ~~a) shortened~~
- b) false
- c) enlarged
- d) true



24. In a case when a line is perpendicular to HP & parallel to VP then what figure will be projected on HP?

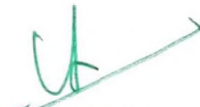
- a) Point
- b) Line
- ~~c) Square~~
- d) Inclined line



25. If the apparent and the true inclinations of a line with HP are equal, the line is \_\_\_\_\_

- a) parallel to horizontal plane
- b) parallel to vertical plane
- c) parallel to profile plane
- ~~d) inclined to both reference plane~~



  
**PRINCIPAL**  
 Netru College of  
 Engineering and Research Centre  
 P. O. Padayathur, Thiruvananthapuram, Kerala  
 Pin - 695 001, Kerala



NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)



DEPARTMENT OF MECHANICAL ENGINEERING  
END COURSE EXAMINATION

Course: CAD THEORY AND PRACTICE

Date: 15<sup>th</sup> Oct, 2016

Total Marks: 50

Total Duration: 1 hour

30/50

- Put a tick towards the right answer.
- If multiple options are chosen for a question it will not be considered for evaluation.
- Attend all the questions.
- There will be no negative marking.

Name: Vishnu . R. Nath

Register Number: NCANEME125

Semester/Year: Sem 7 / IV

Each question carries 2 marks

**1. Physical verification tools in design process includes**

a) circuit extractors

b) textual entry

~~c) graphical entry~~

d) simulation



**2. Behavioral tools contains**

a) graphical entry

~~b) design check~~

c) performance check

d) simulation



**3. Simulators are available for**

a) transistor level logic

~~b) switch level logic~~

c) gate level logic

d) design level logic

**4. Selection and placement is done using**

a) cursor

b) shapes

~~c) textual~~

d) graphical



**5. Cursor position is controlled using**

a) mouse

b) bitpad digitizer



Handwritten signature in green ink

PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Campus, Tadipatri, Dist. Tadipatri, AP

~~e) mouse and bitpad digitizer~~

d) keyboard

6. CIF code is a \_\_\_\_\_ layout language

~~a) mask level~~

b) floor level

c) design level

d) transistor level

7. Which verification capture's thE design intent and not physical layout?

a) mask level layout language

~~b) transistor level layout language~~

c) circuit description language

d) switch level layout language

8. All possible errors in mask layout can be eliminated after mask making proceeds.

a) true

~~b) false~~

9. The nature of physical layout verification software depends on

~~a) absolute design rules~~

b) fixed layout

c) virtual grid layout

d) all of the mentioned

10. Which is used to interpret physical layout in circuit terms?

~~a) circuit converter~~

b) layout converter

c) circuit extractor

d) layout extractor

11. \_\_\_\_\_ is a rectangular pattern of lines or dots which covers in the entire XY plane of user coordinate system.

a) Ortho

~~b) Grid~~

c) Snap

d) Tolerance

12. Which command converts discrete object in polyline?

a) Merge

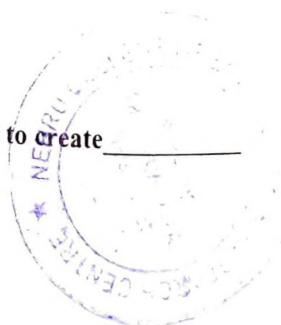
b) Union


~~c) Join~~

d) Add

13. The offset command cannot be used to create \_\_\_\_\_

a) Concentric circles



  
 PRINCIPAL  
 Nehru College of  
 Engineering and Research Centre  
 Tambay, Thiruvananthapuram, India  
 2016-17 C1

- ~~b) Vertical straights~~
- c) Three parallel lines
- d) Parallel arcs

14. Which axis is not used when working in 2-D frame?

- a) Z-axis
- b) Y-axis
- ~~c) X-axis~~
- d) WCS



15. What is the minimum allowable numbers of layers in a drawing?

- a) 0
- b) 1
- ~~c) 2~~
- d) 10



16. Which is corresponded to zoom mouse wheel?

- a) Extend/all
- ~~b) Zoom in/ Zoom out~~
- c) Pan and scan
- d) Scale

17. What setting gradient allows us to fill an open area?

- a) Gap
- b) Tolerance
- ~~c) Transparency~~
- d) Open



18. Which of the following is not a unit of length measurement?

- ~~a) Yards~~
- b) Parsecs
- c) Microns
- d) Grads

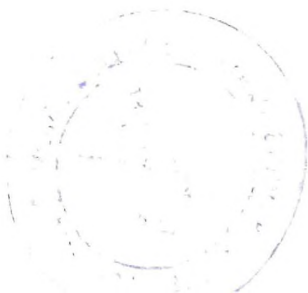


19. A straight line is the \_\_\_\_\_ distance between two points.

- ~~a) shortest~~
- b) longest
- c) half
- d) infinite

20. A line is a geometric primitive that has no \_\_\_\_\_

- a) length
- b) point
- c) direction
- ~~d) thickness~~



PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Palod, Thane District, Maharashtra

21. A line may not be \_\_\_\_\_

- a) parallel to both the planes.
- b) parallel to one plane and perpendicular to the other
- c) parallel to one plane and inclined to the other
- ~~d) perpendicular to both the planes~~

22. When a line is parallel to a plane, the projection of the line on to that plane will be its \_\_\_\_\_ length

- a) shortened
- ~~b) true~~
- c) enlarged
- d) point

23. When the Projection of a line is parallel to both HP and VP its length will be \_\_\_\_\_

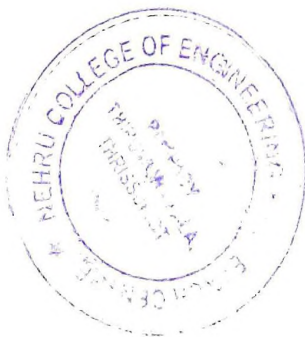
- a) shortened
- b) false
- c) enlarged
- ~~d) true~~


24. In a case when a line is perpendicular to HP & parallel to VP then what figure will be projected on HP?

- ~~a) Point~~
- b) Line
- c) Square
- d) Inclined line

25. If the apparent and the true inclinations of a line with HP are equal, the line is \_\_\_\_\_

- a) parallel to horizontal plane
- ~~b) parallel to vertical plane~~
- c) parallel to profile plane
- d) inclined to both reference plane



  
 PRINCIPAL  
 Nehru College of  
 Engineering and Research Centre  
 Panipady Thuvuvikamata, Thiruvananthapuram  
 Pin - 680 597, Kerala

**NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE, PAMPADY, THRISSUR  
DEPARTMENT OF MECHANICAL ENGINEERING**

YEAR: 2016-17

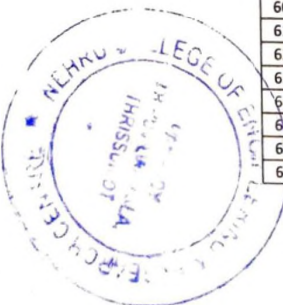
COURSE: CAD THEORY AND PRACTICE

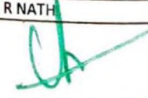
PROGRAM COORDINATOR: Mr. TEDY THOMAS

**END COURSE EXAM MARK STATEMENT**

Sl. No	Reg No	Name	MARKS (50)
1	NCANEME001	AABIND KRISHNA K	42
2	NCANEME002	ABDUL RASHID P A	30
3	NCANEME003	ABHAI DEV AMBOOKEN	28
4	NCANEME004	ABJIITH G	28
5	NCANEME128	ABJIITH U	28
6	NCANEME005	ADHITH SIVADAS	48
7	NCANEME006	ADHVAITH G	34
8	NCANEME007	ADITH NAIR	28
9	NCANEME008	ADWAITH KT	34
10	NCANEME009	AJAY P U	36
11	NCANEME010	AJIL ABRAHAM	42
12	NCANEME011	AJO ABRAHAM	42
13	NCANEME012	AKHIL A.M	42
14	NCANEME013	AKHIL T	36
15	NCANEME014	AKHIL V	28
16	NCANEME015	AKSHAI K.B	48
17	NCANEME016	AKSHAY ARAVIND A	30
18	NCANEME017	AKSHAY KUMAR B	38
19	NCANEME019	AMIRSUHAIL P.V	28
20	NCANEME020	ANAND K.V	32
21	NCANEME021	ANANTHAKRISHNAN NAIR	28
22	NCANEME022	ANIRUDH T J	30
23	NCANEME023	ANISH N	26
24	NCANEME024	ANOOOP K	26
25	NCANEME026	ANOOP RAJ A	32
26	NCANEME025	ANOOPKUMAR K	30
27	NCANEME027	ARJUN K	32
28	NCANEME029	ARJUN M	40
29	NCANEME030	ARUN S	34
30	NCANEME031	ASHOK KALYAN P.M	28
31	NCANEME032	ASWIN DAS D	36
32	NCANEME033	ASWIN E	28
33	NCANEME034	ASWIN K K	48
34	NCANEME035	ASWIN T	48
35	NCANEME036	ATHIRA RAJEEVAN	30
36	NCANEME037	BAJUJUMON A.R	28
37	NCANEME038	BASIL MARTIN	44
38	NCANEME039	BIJITH MOHAN K	30
39	NCANEME040	C M SREEKANTH	36
40	NCANEME041	C P MUHAMMED FAYAS	44
41	NCANEME042	DANIEL P J	48
42	NCANEME043	DEAN DAVIS A	46
43	NCANEME044	DEEPAK G	44
44	NCANEME129	DHANIL D	40
45	NCANEME045	DHANUSH S PILLAI	40
46	NCANEME046	DHEERAJ K	30
47	NCANEME047	DILTON JOY	36
48	NCANEME048	DIXON P JOHNY	26
49	NCANEME130	ELDHOSE K.K	44
50	NCANEME049	FAISAL K	38
51	NCANEME137	FAWAZ K	28
52	NCANEME050	GARREN SABU	28
53	NCANEME051	GILSON VARGHESE	48
54	NCANEME052	GOKUL PEETHAMBARAN	40
55	NCANEME053	GOUTHAMAN P.R	36
56	NCANEME054	HAMRAS B H	26
57	NCANEME131	HAREESH KUMAR P V	26
58	NCANEME055	HARIKRISHNAN KP	28
59	NCANEME138	IMRAN I.T	28
60	NCANEME056	JAFFAR MOHAMMED B	14
61	NCANEME057	JAYASOORYA JAYARAM	34
62	NCANEME058	JESTIN JOHN	32
63	NCANEME060	JISHNU AJITHKUMAR NAIR	34
64	NCANEME061	JISHNU NARAYANAN	30
65	NCANEME062	JITHIN KURIAN JOSEPH	26
66	NCANEME063	JITHIN P R	32
67	NCANEME064	JOE BOBAN	38

Sl. No	Reg No	Name	MARKS (50)
68	NCANEME065	JUNAID C	36
69	NCANEME066	KARTHIK U	26
70	NCANEME067	KIRAN B	26
71	NCANEME132	KIRAN P S	28
72	NCANEME069	MANEESH M NAIR	28
73	NCANEME070	MIDHUN REJI M	48
74	NCANEME071	MIDHUN S NARAYANAN	34
75	NCANEME072	MOHAMAD JASEEL K	32
76	NCANEME073	MOHAMMED NIZAM C	34
77	NCANEME074	MUHAMMED ASHIQUE A.K	30
78	NCANEME075	MUHAMMED FAZIL K M	32
79	NCANEME076	NAZIM K SHAJAHAN	32
80	NCANEME077	NIDESH NELLANI	38
81	NCANEME078	NIHAS M H	30
82	NCANEME079	NISAR AHAMMED P	40
83	NCANEME080	NITHIN MENON	46
84	NCANEME081	NITHIN MOHAN	36
85	NCANEME082	NITHIN V	36
86	NCANEME083	PRANAV K J	28
87	NCANEME084	PRAVEEN D	36
88	NCANEME085	RAHUL G SATHYAN	28
89	NCANEME086	RAKESH K	26
90	NCANEME087	RAKESH KRISHNA	28
91	NCANEME088	RAMESH K K	26
92	NCANEME089	RANJITH P D	26
93	NCANEME139	RASHID MUHINUDHEEN	28
94	NCANEME090	REVANTH R	32
95	NCANEME091	RICHARD JOHNSON	38
96	NCANEME092	RITHIN K RAJAN	34
97	NCANEME093	ROBBY K R	32
98	NCANEME094	RUPESH G	26
99	NCANEME140	SABARISH CHANDRAN	28
100	NCANEME095	SACHIN PV	40
101	NCANEME096	SAIKRISHNA N	38
102	NCANEME097	SAJITH T R	30
103	NCANEME141	SAMRAN I T	28
104	NCANEME142	SARATHKUMAR N.S	44
105	NCANEME098	SATHYADEV D	30
106	NCANEME099	SAYODJ K P	32
107	NCANEME100	SHABEER AHAMED	34
108	NCANEME135	SHAFIQ MUHAMAD	44
109	NCANEME101	SHAH RUKH HASSAN	40
110	NCANEME102	SHOBIN KRISHNA P	46
111	NCANEME134	SINU ANTO	46
112	NCANEME103	SOORAJ V	40
113	NCANEME104	SRAVAN K K	28
114	NCANEME105	SREEKANTH P R	36
115	NCANEME106	SREEKUMAR V NAIR	30
116	NCANEME107	SREERAG P	40
117	NCANEME108	SREERAG P S	34
118	NCANEME109	SREERAG T V	28
119	NCANEME110	SREERAM C SEKHAR	32
120	NCANEME111	SUBINRAJ P S	46
121	NCANEME112	SUHAIB K	38
122	NCANEME113	SURAJ BENNY	42
123	NCANEME114	SWATHY KIRAN	32
124	NCANEME115	SYAM P S	34
125	NCANEME116	SYED AJMAL	30
126	NCANEME136	VAISAK P.V	34
127	NCANEME118	VIDYARJUN K.S	30
128	NCANEME119	VIGHNESH P C	26
129	NCANEME120	VINEETH N	34
130	NCANEME121	VISAKH K	28
131	NCANEME122	VISHNU HARIDAS	42
132	NCANEME123	VISHNU MURALI A	42
133	NCANEME124	VISHNU R KUMAR	26
134	NCANEME125	VISHNU R NATH	30



  
**PRINCIPAL**  
 Nehru College of  
 Engineering and Research Centre  
 Pampady Thruvankulam Thriassur Dt  
 Pin - 686 001 Kerala

Sl. No	Reg No	Name	MARKS (50)
135	NCAOEME001	AADITH K JAYARAJ	28
136	NCAOEME002	ABEL ELIAS	36
137	NCAOEME125	ABHIJITH A	42
138	NCAOEME003	ABHILASH C	30
139	NCAOEME004	ABHILASH P MOHAN	32
140	NCAOEME005	ACHUTH KAILAS E	30
141	NCAOEME006	ADARSH A	40
142	NCAOEME007	ADARSH CHANDRA	48
143	NCAOEME008	ADHARSH K T	48
144	NCAOEME009	ADITH VARMA M	26
145	NCAOEME010	AJAY SEKHAR	28
146	NCAOEME126	AJITH P BABU	40
147	NCAOEME011	AKHIL KRISHNAN M.A	32
148	NCAOEME012	AKSHAY MOHANDAS	36
149	NCAOEME013	AKSHAY P	32
150	NCAOEME014	AKSHAY SANTHOSH	44
151	NCAOEME072	AKSHAYDAS NP	36
152	NCAOEME016	AMAL SANKAR T S	42
153	NCAOEME017	AMEER SUHAIL	34
154	NCAOEME018	AMRITHESH M	44
155	NCAOEME019	ANEESH KRISHNAN P	44
156	NCAOEME020	ANSAR S	48
157	NCAOEME021	ANWAR P A	36
158	NCAOEME022	ARAVIND M.U	26
159	NCAOEME023	ARJUN A.S	40
160	NCAOEME133	ARJUNLAL A.C	28
161	NCAOEME024	ARSHAQ K S	28
162	NCAOEME025	ARUN GOPINATHAN K	26
163	NCAOEME026	ARUN K	36
164	NCAOEME027	ARUN S	38
165	NCAOEME028	ASHIK MOHAN	34
166	NCAOEME029	ASHWIN NAIR	32
167	NCAOEME030	ASWAN KRISHNA R	32
168	NCAOEME032	ATHUL T.S	26
169	NCAOEME033	BARATH M	36
170	NCAOEME034	BIJU P.M	36
171	NCAOEME035	BIMAL BAIJU C	26
172	NCAOEME036	DEVNATH C.D	26
173	NCAOEME037	DHANEESH KRISHNAN	28
174	NCAOEME038	DILEEP M	30
175	NCAOEME039	GANESH S	40
176	NCAOEME040	GOKUL P MENON	42
177	NCAOEME132	JIBIN C.K	48
178	NCAOEME041	JISHNU MADHAVAN	46
179	NCAOEME042	JITHIN KRISHNA A.P	44
180	NCAOEME043	JITTO GEORGE	42
181	NCAOEME044	KINAYATH SACHIN MENON	26
182	NCAOEME046	KIRAN KRISHNA P.S	26
183	NCAOEME045	KIRANDAS PR	34
184	NCAOEME047	KISHAN S MOHAN	34
185	NCAOEME048	LINTO T PALAYDOR	38
186	NCAOEME127	MANOJ K P	38
187	NCAOEME049	MANSUR K.M	26
188	NCAOEME050	MIDHUN A	36
189	NCAOEME051	MIDHUN M	82
190	NCAOEME052	MINHAJ P	42
191	NCAOEME053	MOHAMED SAFEER C	42
192	NCAOEME054	MOHAMMED NIBIL P.K	36
193	NCAOEME055	MOHAMMED RIFAD	40
194	NCAOEME056	MOHAMMED RISAL	42
195	NCAOEME057	MOHAMMED SALIH N.P	46
196	NCAOEME058	MOHAMMED SHIBIN P	34
197	NCAOEME060	MUHAMMED ANSAR E	34
198	NCAOEME061	MUHAMMED FAYAS K C	28

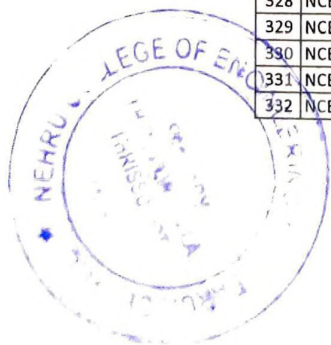
Sl. No	Reg No	Name	MARKS (50)
199	NCAOEME062	MUHAMMED SAJID	28
200	NCAOEME063	NAIR VINAY SASIKUMAR	34
201	NCAOEME064	NAKUL A.R	44
202	NCAOEME065	NANDAGOPAL V V	28
203	NCAOEME066	NAVEEN S	30
204	NCAOEME067	NAZRUI AZLAM	36
205	NCAOEME068	NIBINIAL PT	38
206	NCAOEME069	NIDHIN MOHAN P	46
207	NCAOEME070	NIKHIL J	44
208	NCAOEME071	NIKHIL M	36
209	NCAOEME073	PRAKHIL P	26
210	NCAOEME074	RAHUL M	38
211	NCAOEME075	RAHUL MURALI P	30
212	NCAOEME076	RAJITH MR	34
213	NCAOEME077	RAKESH P.R	32
214	NCAOEME078	RAMACHANDRAN S	42
215	NCAOEME079	RAMDAS M	36
216	NCAOEME080	RAMSHEER P	42
217	NCAOEME081	RANJIR	32
218	NCAOEME082	RANJISH K	44
219	NCAOEME083	RIJAS S	10
220	NCAOEME084	ROHIT S THATTIL	16
221	NCAOEME085	ROSHIN K.H	16
222	NCAOEME086	SAANU SADANAND	16
223	NCAOEME087	SACHINDEV V	28
224	NCAOEME088	SAJEEV A S	28
225	NCAOEME089	SAJITH S	26
226	NCAOEME090	SANDEEP KUMAR K P	28
227	NCAOEME091	SANEESH M	36
228	NCAOEME092	SANGEETH NARAYAN B	40
229	NCAOEME093	SANJAY C	34
230	NCAOEME094	SANJAY P.M	34
231	NCAOEME095	SARATH ARAVIND S	32
232	NCAOEME096	SARATH C	28
233	NCAOEME097	SATHEESH R	36
234	NCAOEME098	SHARATH JAYAKRISHNAN	38
235	NCAOEME128	SHOYAB MOHAMED SHELLY	28
236	NCAOEME099	SHRAVAN K	28
237	NCAOEME100	SIDDHARTH G S	32
238	NCAOEME101	SOORAJ BHASKARAN	30
239	NCAOEME102	SOORYAJITH	40
240	NCAOEME129	SREEJITH K	44
241	NCAOEME103	SREEJITH K P	48
242	NCAOEME104	SREEJITH S DEVAN	46
243	NCAOEME105	SREERAG M	46
244	NCAOEME106	SREERAG S	42
245	NCAOEME108	SUBIN D STEPHEN	28
246	NCAOEME109	SUHAIL K.M	26
247	NCAOEME110	SYAMJITH K	36
248	NCAOEME131	TINUKRISHNAN P	34
249	NCAOEME121	VARUN SWAMY V	38
250	NCAOEME112	VJESH M V	40
251	NCAOEME130	VINEETH VARIYAR	28
252	NCAOEME113	VIPUL VISWANATHAN	38
253	NCAOEME114	VISAL P	83
254	NCAOEME115	VISHNU BHASKAR R	34
255	NCAOEME116	VISHNU M	26
256	NCAOEME117	VISHNU SHANKAR	36
257	NCAOEME118	VISHNU T.G	34
258	NCAOEME119	VIVEK SANKAR P	38
259	NCAOEME120	VIVEK V NAIR	40
260	NCAOEME122	VYSHAK K	28
261	NCAOEME123	YADHUKRISHNA A	38
262	NCAOEME124	YADUKRISHNAN V	83



PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Palupady Thiruvananthapuram, Kerala  
Pin - 695011

Sl. No	Reg No	Name	MARKS (50)
263	NCE15ME001	ABDUL LATHEEF A	38
264	NCE15ME002	ABDULLA S	42
265	NCE15ME003	ABEJITH D	40
266	NCE15ME004	ABHIJITH P	48
267	NCE15ME005	ABHIJITH V NAIR	38
268	NCE15ME006	ABHISHEK SUNIL	34
269	NCE15ME008	ADVAIDH H	42
270	NCE15ME009	AJITH C	42
271	NCE15ME010	AJITH K A	48
272	NCE15ME080	AJITH P V	38
273	NCE15ME012	AJMAL P	34
274	NCE15ME013	AKHIL M	42
275	NCE15ME014	AKHIL MOHAN	42
276	NCE15ME015	AKHIL P	44
277	NCE15ME017	AMOGHKRISHNAN	38
278	NCE15ME018	ANAND C O	42
279	NCE15ME019	ANAND MOHAN	42
280	NCE15ME020	ANANTH THILAK K V	44
281	NCE15ME023	ANIRUDH JAYAKUMAR K	42
282	NCE15ME022	ANIRUDH M R	44
283	NCE15ME024	ANIRUDH S NAIR	38
284	NCE15ME027	ARJUN PADMANABAN	42
285	NCE15ME025	ARJUN PURATHENDERRI	30
286	NCE15ME028	ASRITH K V	36
287	NCE15ME030	ATHUL DAS C H	42
288	NCE15ME029	ATHUL K	42
289	NCE15ME031	BASSIM A	28
290	NCE15ME127	BHARADWAJ R GOVIND	44
291	NCE15ME032	BIBIN M	30
292	NCE15ME033	D VIPIN DAS	38
293	NCE15ME034	DHANESH T	30
294	NCE15ME035	DHANITH A V	26
295	NCE15ME036	DHEERAJ V K	42
296	NCE15ME037	DIVYA MOHAN	38
297	NCE15ME038	FARHAN T	44
298	NCE15ME039	GEETHIKA ASHOK	28
299	NCE15ME040	GIRISH K M	48
300	NCE15ME041	GOUTHAM C	38
301	NCE15ME042	GOVIND M	34
302	NCE15ME043	HABEEB N	42
303	NCE15ME044	HAFIS M	36
304	NCE15ME045	HARIKRISHNAN S	44
305	NCE15ME128	HARIKRISHNAN V	38
306	NCE15ME046	HARIRAM V	34
307	NCE15ME048	HASHEL O	28
308	NCE15ME049	JAIS TOM SAJI V	48
309	NCE15ME050	JAMES JAMES	38
310	NCE15ME051	JING KURIAKOSE	34
311	NCE15ME052	JITHIN C R	42
312	NCE15ME053	JOVIN AUGUSTIAN MATHEW	38
313	NCE15ME054	KAMIL MOHAMED	44
314	NCE15ME055	KARTHIK K	38
315	NCE15ME057	KIRAN R NAIR	34
316	NCE15ME058	KRISHNA PRASAD T M	38
317	NCE15ME129	KRISHNA RAJ	34
318	NCE15ME059	LINOL P LORANCE	36
319	NCE15ME062	MAHMOOD ABOOBACKER	28
320	NCE15ME063	MANISH MOHAN	42
321	NCE15ME064	MANJUNATH A	36
322	NCE15ME065	MELVIN JOHNSON	42
323	NCE15ME066	MITHUN GOPINATH	26
324	NCE15ME067	MOHAMED JASIL C	34
325	NCE15ME068	MOHAMMED SAFARULLA	42
326	NCE15ME069	MUHAMMED KUNHI M P	42
327	NCE15ME070	NAJMAL K JAMAL	44
328	NCE15ME071	NANDAGOPAN K S	30
329	NCE15ME073	NIJIL C R	38
330	NCE15ME074	NITHIN A M	30
331	NCE15ME075	NITHIN K P	26
332	NCE15ME076	NITHIN R K	26

Sl. No	Reg No	Name	MARKS (50)
333	NCE15ME079	NOUSHAD C N	26
334	NCE15ME081	PRAJITH T	34
335	NCE15ME083	RAHUL K R	32
336	NCE15ME082	RAHUL K R	32
337	NCE15ME084	RAMSHID S M	30
338	NCE15ME085	RENJITH N P	12
339	NCE15ME086	RIDHINJITH M P	36
340	NCE15ME087	ROBIN RAPPAI	36
341	NCE15ME089	ROHITH KRISHNAN R	40
342	NCE15ME090	ROJAN V THANJAN	32
343	NCE15ME091	ROSHAN AHAMED N A	38
344	NCE15ME092	SABIQ ZAYAN S	34
345	NCE15ME093	SACHIN DAS	42
346	NCE15ME094	SAHAL T	34
347	NCE15ME095	SAIKRISHNA K B	36
348	NCE15ME097	SANAL V CYRIAC	30
349	NCE15ME098	SANDEEP D	48
350	NCE15ME101	SAURAV P S	46
351	NCE15ME105	SHRAVAN GOPAL	28
352	NCE15ME108	SREEJITH S	28
353	NCE15ME109	SREEJITH V K	38
354	NCE15ME110	SREEKANTH K	28
355	NCE15ME112	SREERAG A G	28
356	NCE15ME113	SREERAG K	30
357	NCE15ME114	SREERAG P V	30
358	NCE15ME115	SUDHEESH C	40
359	NCE15ME118	SURABISH V S	28
360	NCE15ME119	VAISHNAV V	18
361	NCE15ME120	VISHAGH V	12
362	NCE15ME121	VISHNU K N	14
363	NCE15ME122	VISHNU PRABHAKARAN	26
364	NCE15ME123	VISWAJITH S NAIR	32
365	NCE15ME124	VYSAGH V	32
366	NCE15ME125	VYSAKH P	28
367	-	JITHIN P J	32
368	-	SUDHEER G	34
369	-	ABINAV V	14
370	-	AJAY KRISHNA J	20
371	-	AJMAL NIZAM	18
372	-	AJAY P	16
373	-	ARJUN U	14
374	-	ARUN KRISHNA G	12
375	-	ASWIN A S	8
376	-	ATHUL M	10
377	-	DEEPAK P P	12
378	-	DHANESH K	14
379	-	FAZIL MOHAMMED	14
380	-	JINTO THIMOTHY	16
381	-	LAHASHAD C A	14
382	-	MIDHUN RAJ K	12
383	-	MUHAMMED ANEES	12
384	-	MUHAMMED HASEEBUSSAMA	14
385	-	RAHUL R	12
386	-	SHALIF P S	16
387	-	SHIJO JOSHY	18
388	-	SHIYAS M	14
389	-	SHYAM M A	14
390	-	SREEHARI MADHU	16
391	-	SREEHARI UNNIKRISHNAN	14
392	-	VINEETH N V	14
393	-	PAUL JIMS	12
394	-	PRAJITH P	12
395	-	PRATHEEV KUMAR K	12
396	-	R ADHARSH	10
397	-	RAFEEK T S	8
398	-	SARATH V P	12
399	-	SAYUJ M J	10
400	-	SOORAJ SIVADASAN	18



*[Signature]*  
PROGRAM COORDINATOR

*[Signature]*  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre



# Certificate



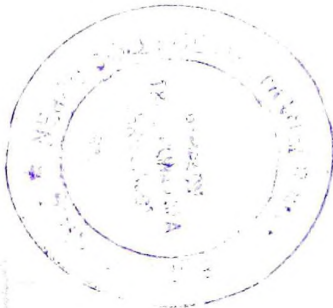
**SUHAIB K**

had successfully completed **CAD THEORY & PRACTICE** during 2016-2017 conducted by **Department of Mechanical Engineering** at, Nehru College of Engineering and Research Centre Pampady, Thrissur.

**PROGRAM  
CO-ORDINATOR**

**HEAD OF  
DEPARTMENT**

**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Pampady, Thrissur





# Certificate



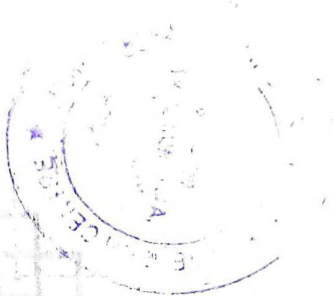
**VISHNU R NATH**

had successfully completed **CAD THEORY & PRACTICE**  
during 2016-2017 conducted by **Department of Mechanical  
Engineering** at, Nehru College of Engineering and Research  
Centre Pampady, Thrissur.

**PROGRAM  
CO-ORDINATOR**

**HEAD OF  
DEPARTMENT**

**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Pampady, Thrissur





# Certificate



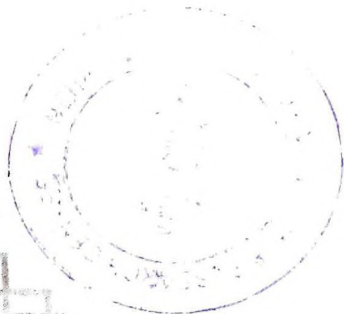
**AABIND KRISHNA K**

had successfully completed **CAD THEORY & PRACTICE**  
during 2016-2017 conducted by **Department of Mechanical  
Engineering** at, Nehru College of Engineering and Research  
Centre Pampady, Thrissur.

**PROGRAM  
CO-ORDINATOR**

**HEAD OF  
DEPARTMENT**

**PRINCIPAL**  
Nehru College of Engineering and Research Centre  
Pampady, Thrissur





**NEHRU COLLEGE OF ENGINEERING  
AND RESEARCH CENTRE**



*(NAAC Accredited)  
(Approved by AICTE & Affiliated to University of Calicut  
and Kerala Technological University)*

**DEPARTMENT OF MECHANICAL ENGINEERING**

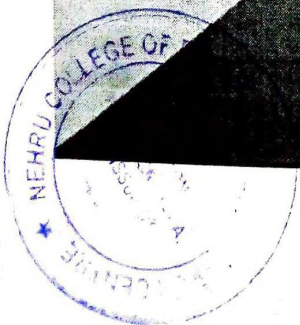
The Department of Mechanical Engineering is planning to conduct a 30 hour certification course scheduled during the months of August and September of this academic year 2016 - 2017. The course is intended to be beneficial for students in their academics as well as professional life and therefore is offered to all B.Tech Mechanical Engineering students. All the students are here by directed to enroll in the course mandatorily.

**COURSE NAME: "CAD THEORY AND PRACTICE"**

**PROGRAM CO-ORDINATOR: Mr. TEDY THOMAS**  
Assistant Professor  
Mechanical Department

**DATE OF COMMENCEMENT: 6th August 2016**

**DURATION: 30 Hours**



PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
P.O. Box 100, Kollam, Kerala  
Pin - 686 597 Kerala



**NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)**

(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)



# **Mechatronics Engineering**



**NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE**  
**(NAAC Accredited)**  
(Approved by AICTE, Affiliated to University of Calicut & APJ Abdul Kalam Technological University, Kerala)



**ADMISSION TO CERTIFICATION COURSE (2016-2017)**

Applications are invited for admission for the Certification Course 'REFRIGERATION AND AIR CONDITIONING' offered by the Department of Mechatronics Engineering, Nehru college of Engineering and Research Centre, Pampady, Thrissur.

**Eligibility criteria**

All UG engineering students of MTR Department are eligible

**Timing:**

1 hour per day from 4.00pm to 5.00pm for 30 hours of the course. Saturday and Sunday may be used at the discretion of the department.

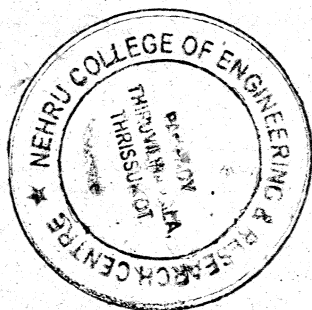
**Attendance**

A minimum of 75% attendance is required for writing the examination.

**Important Dates**

Commencement of classes: 22-08-2016

Examination Date: 11-11-2016



HOD

**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Pampady, Inruvilwamala, Thrissur Dt,  
Pin 680 597 Kerala

FROM

MR. RANJITH P N

ASSISTANT PROFESSOR

MTR DEPARTMENT, NCERC PAMPADY

TO

HEAD OF THE DEPARTMENT

MTR DEPARTMENT

NCERC PAMPADY

SUBJECT: Requisition for conducting Certification Course on "REFRIGERATION AND AIRCONDITIONING"

Respected Sir,

As the Assistant Professor of Mechatronics Engineering, I would like to request your support and permission to conduct a Certification Course on "REFRIGERATION AND AIRCONDITIONING" from 22-08-2016. It will be a 30 hour course scheduled for July to October of this academic year 2016-2017. It is therefore important for students to have a deep understanding of upcoming methodologies to enhance knowledge dissemination to students for doing projects.

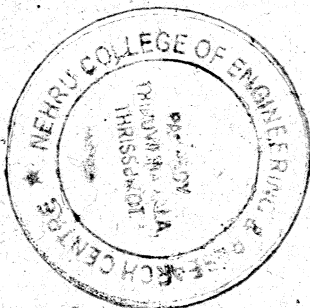
All UG Engineering students of MTR Department are eligible for this course.

Sincerely,



PLACE: Pampady

DATE: 11/7/16



PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Panipady, Thiruvilwamala, Thrissur  
Pin - 680 597 - Kerala

**NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE**  
**(ACCREDITED BY NAAC)**  
**PAMPADY, THIRUVILWAMALA, THRISSUR DIST.**

MINUTES OF DEPARTMENT ADVISORY COMMITTEE MEETING HELD ON 25/07/2016

A meeting of the Department Advisory Committee (DAC) was held on 25<sup>th</sup> July 2016 at 1:00 PM in the chamber of HoD, MTR department.

The following members were present:

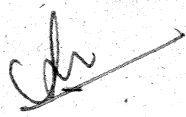
1. Prof. Radhakrishnan-HoD, MTR Dept.
2. Mr. Niveth L-Assistant Professor, MTR Dept.
3. Mr. Midhunraj P K-Assistant Professor, MTR Dept.
4. Mr. Ranjith P N-Assistant Professor, MTR Dept.
5. Mr. Dhanesh S-Assistant Professor, MTR Dept.

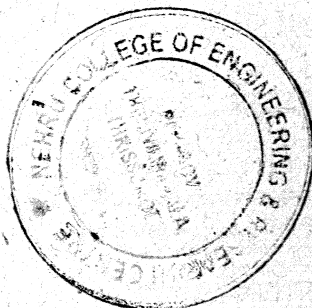
The following decisions were taken:

1. It was decided to conduct a certificate course on "REFRIGERATION AND AIRCONDITIONING" during the academic year 2016-17 from 1<sup>st</sup> August 2016 onwards for a period of 30 hours.
2. The course will update the technical knowledge of students in the latest developments related to the field of refrigeration and air conditioning.
3. It was decided to provide the course for the UG students of Mechatronics Engg. Department.
4. Also, it was decided to ensure compulsory attendance and staff advisors should monitor the same.

The meeting came to an end at 1:45 PM.

  
HoD

  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala Thrissur Dt  
Pin 680 597 Kerala

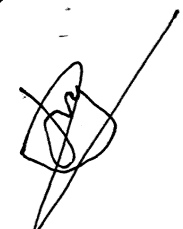


FROM

MR. RANJITH P N

ASSISTANT PROFESSOR.

MTR DEPARTMENT, NCERC PAMPADY

Forwarded to Principal  


TO

THE PRINCIPAL,

NCERC PAMPADY

Through HOD

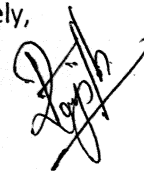
Respected Sir,

SUBJECT: Requisition for conducting Certification Course on "REFRIGERATION AND AIRCONDITIONING"

Students need a deep understanding of upcoming methodologies to enhance knowledge dissemination for doing projects. Refrigeration is the process of lowering the temperature of a substance & Air conditioning is the process of treating and distributing air to control temperature, humidity, and air quality, so Mechatronics Engineering department would like to conduct a Certification Course on "REFRIGERATION AND AIRCONDITIONING" from 22-08-2016. It will be a 30 hour course scheduled for July to October of this academic year 2016-2017. Kindly request you to give the permission for the same.

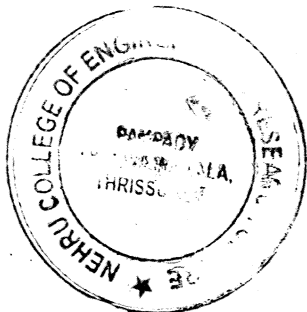
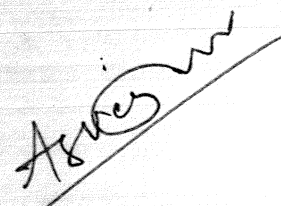
All UG Engineering students of MTR Department are eligible for this course.

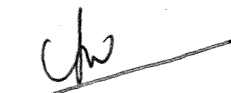
Sincerely,



PLACE: PAMPADY

DATE: 1/8/16



  
**PRINCIPAL**  
Nehru College of  
Engineering and Research Center  
Pampady, Thiruvilwamala, Thrissur, Kerala



**NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)**

(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)  
**ADD ON COURSE SYLLABUS AND SCHEDULE**



## **REFRIGERATION AND AIRCONDITIONING**

### **OBJECTIVES:**

To understand the underlying principles of operations in different Refrigeration & Air conditioning systems and components.

To provide knowledge on design aspects of Refrigeration & Air conditioning systems

### **UNIT I : INTRODUCTION**

Introduction to Refrigeration – Unit of Refrigeration and C.O.P.– Ideal cycles- Refrigerants  
Desirable properties – Classification – Nomenclature – ODP & GWP.

### **UNIT II: VAPOUR COMPRESSION REFRIGERATION SYSTEM**

Vapor compression cycle: p-h and T-s diagrams – deviations from theoretical cycle – subcooling and super heating- effects of condenser and evaporator pressure on COP

### **UNIT III: EQUIPMENTS FOR REFRIGERATION**

Multipressure system – low temperature refrigeration – Cascade systems – problems.  
Equipments: Type of Compressors, Condensers, Expansion devices, Evaporators.

### **UNIT IV: OTHER REFRIGERATION SYSTEMS**

Working principles of Vapour absorption systems and adsorption cooling systems – Steam jet refrigeration- Ejector refrigeration systems- Thermoelectric refrigeration- Air refrigeration – Magnetic – Vortex and Pulse tube refrigeration systems.

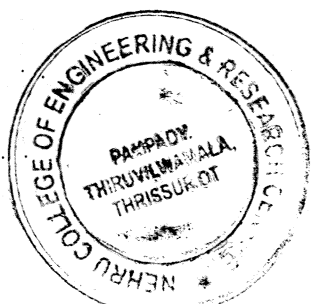
### **COURSE SCHEDULE**

Commencement of classes: 22-08-2016

Examination Date: 11-11-2016

**PROGRAM COORDINATOR**

**HOD**



**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thrissur, OT  
Pin 680 597 Kerala

**NEHRU COLLEGE OF ENGINEERING & RESEARCH CENTRE**

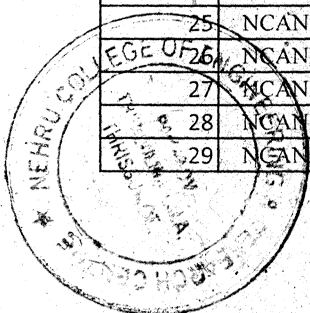
Pampady, Thiruvilwamala, Thrissur Dt.

**DEPARTMENT OF MECHATRONICS ENGINEERING**

**REFRIGERATION AND AIRCONDITIONING**

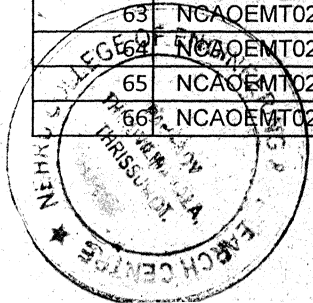
Attendance Sheet

SL. NO.	REG. NO.	NAME OF STUDENT	22/8/16	23/8/16	25/8/16	26/8/16	27/8/16	29/8/16	30/8/16	31/8/16	1/9/16	2/9/16
1	NCANEMT002	ADITHYA SURESH	a	/	/	/	/	/	/	/	/	/
2	NCANEMT003	AKARSH S	/	/	/	/	/	/	/	/	/	a
3	NCANEMT004	AKSHAY CHANDRAN	/	a	/	/	/	/	/	a	/	/
4	NCANEMT005	AKSHAY M	/	/	/	/	a	/	/	/	/	/
5	NCANEMT006	ALOSHIOUS M DASAN	/	/	/	/	/	/	a	/	/	/
6	NCANEMT007	ALTHAF MOHAMMED M	/	/	/	/	/	/	a	/	/	a
7	NCANEMT008	ANARGH VISWANATH	a	/	/	/	/	/	a	/	/	/
8	NCANEMT010	ANEESH K A	/	/	/	a	/	/	/	/	/	/
9	NCANEMT013	ARJUN K G	/	a	/	/	/	/	/	/	/	/
10	NCANEMT014	ARJUN P MENON	/	/	/	/	/	/	/	/	/	a
11	NCANEMT015	ARJUN VYSAKH C	/	/	/	/	/	/	/	/	/	a
12	NCANEMT016	ARJUN VIJAY	/	/	/	/	a	a	/	/	/	/
13	NCANEMT017	ASHWIN K J	/	/	a	/	/	/	/	/	/	/
14	NCANEMT018	ASHWIN VARGHESE	/	/	/	/	/	/	/	a	/	/
15	NCANEMT019	ATHUL AJITH K	a	/	/	/	/	/	/	/	/	/
16	NCANEMT021	AVINASH SEN	/	/	/	a	/	/	/	/	a	/
17	NCANEMT022	CIBIN JOHN JOSEPH	/	a	/	/	/	a	/	/	/	/
18	NCANEMT023	DINILKUMAR K	/	/	/	/	a	/	/	/	/	a
19	NCANEMT024	EBIN SUNNY	/	/	/	/	a	/	/	/	/	a
20	NCANEMT025	EMIL TOM	a	/	/	/	a	/	/	/	/	/
21	NCANEMT026	FREDIN V JOSE	/	/	a	/	/	/	/	a	/	/
22	NCANEMT027	HARIKRISHNAN P	/	/	/	/	/	/	/	a	/	a
23	NCANEMT028	IRSHAD MOHAMED GHANI	/	/	/	a	/	/	/	a	/	/
24	NCANEMT029	JERIN JOSE	/	/	/	/	/	/	/	/	a	/
25	NCANEMT030	JITHESH V K	/	/	/	/	a	/	a	/	/	/
26	NCANEMT031	JITHU J	/	/	a	/	/	/	/	a	/	/
27	NCANEMT032	JYOTHISH M N	a	/	/	/	/	/	/	/	/	a
28	NCANEMT033	MUHAMMED BADSHA	/	a	/	/	/	a	/	/	/	/
29	NCANEMT034	MUHAMMED MISHAL K	/	/	/	a	/	/	/	/	/	a



PRINCIPAL  
Nehru College of  
Engineering and Research Centre

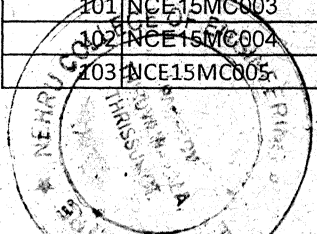
30	NCANEMT038	PRAVEEN A S	a	/	/	/	/	a	/	/	/	/
31	NCANEMT039	PRAVEEN PRAKASH	a	/	/	a	/	/	/	/	/	/
32	NCANEMT040	RAMKUMAR	/	/	a	/	/	/	/	/	a	/
33	NCANEMT041	RIBIN MATHIEW	/	/	/	/	a	/	/	a	/	/
34	NCANEMT042	RIDUL RAZWIN M R	/	/	/	/	a	/	/	a	/	/
35	NCANEMT043	SANAL P	a	/	a	/	/	/	/	a	/	/
36	NCANEMT044	SAYOOJ T K	/	/	/	a	/	/	/	a	/	/
37	NCANEMT045	SHAH SAD M	/	/	a	/	/	/	/	/	/	a
38	NCANEMT046	SHYAMAPRASAD O K	/	a	/	/	/	a	/	/	/	/
39	NCANEMT047	SIDDARTH A T	/	a	/	/	/	/	/	/	/	a
40	NCANEMT048	SREEJITH P G	/	/	/	/	/	a	a	/	/	/
41	NCANEMT049	SRUTHY S NAIR	a	/	/	/	/	/	/	/	a	/
42	NCANEMT050	VISHNU DAS M	a	/	a	/	a	/	/	/	/	/
43	NCANEMT051	VISHNU PRASAD	/	/	/	/	/	a	/	/	/	/
44	NCANEMT052	JASEEL P	/	/	/	a	/	/	/	/	/	a
45	NCANEMT053	SOUMYA A K	/	/	/	/	a	/	/	a	/	/
46	NCANEMT054	VARSHA C K	/	/	/	/	/	/	a	/	/	/
47	NCAOEMT001	AAZTLEKHAN N	/	/	/	/	/	/	/	/	/	/
48	NCAOEMT002	ABDULLA NAJID C P	/	/	/	/	a	/	/	/	/	/
49	NCAOEMT003	ABHIJITH JOHN	/	/	a	/	/	/	/	/	/	/
50	NCAOEMT004	ABY POIUSON	/	a	/	/	/	/	/	/	a	/
51	NCAOEMT005	ADARSH MOHAN	/	/	/	/	/	/	/	/	/	/
52	NCAOEMT006	AISWARYA UNNI	a	/	/	a	/	/	/	/	/	/
53	NCAOEMT007	AJAY AUGUSTINE	/	/	/	/	a	/	/	/	/	/
54	NCAOEMT008	AKHIL A	/	/	/	/	/	/	/	a	/	/
55	NCAOEMT009	AKHIL JOSEPH	/	a	/	/	/	/	/	/	/	/
56	NCAOEMT010	AKSHAY R	/	/	/	/	a	/	/	/	/	a
57	NCAOEMT011	ALEN BABY	/	/	a	/	/	/	/	/	/	/
58	NCAOEMT012	ALISHIHAN M S	/	/	/	/	/	a	/	/	/	/
59	NCAOEMT013	ANAND A S	/	a	/	/	/	/	a	/	/	/
60	NCAOEMT014	ANANDHU K V	/	/	/	/	/	/	/	/	/	/
61	NCAOEMT015	ANANTHU K S	a	/	/	/	/	a	/	/	/	a
62	NCAOEMT022	BASIL T ABRAHAM	/	/	/	/	/	/	/	/	/	/
63	NCAOEMT023	DERVISH HUSSAIN V	/	/	a	/	/	/	/	/	/	/
64	NCAOEMT024	EDWIN JOHNY	/	/	/	/	/	/	/	a	/	a
65	NCAOEMT025	ERSHINADH K KRISHNA	/	/	/	/	a	/	/	/	/	/
66	NCAOEMT026	FEMINA SHIREEN A	/	/	/	/	/	/	/	/	a	/



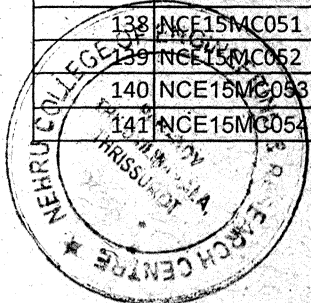
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Dominary Thiruvilwamala, Thiruvananthapuram Dt


67	NCAOEMT027	FREDIN V JAMES	a	/	/	/	/	/	/	/	/	/
68	NCAOEMT028	GAUTHAM KRISHNA S	/	/	/	/	/	/	/	/	/	a
69	NCAOEMT029	GOPIKA M S	/	/	/	/	/	/	/	/	a	/
70	NCAOEMT030	GOVIND K	/	a	/	/	/	/	/	/	/	/
71	NCAOEMT031	HARIKRISHNAN N	/	/	/	/	/	/	/	a	/	/
72	NCAOEMT032	ISHAN HUSSAIN KALAKKAT	/	/	/	/	/	/	/	a	/	/
73	NCAOEMT033	JEEN M JOY	/	/	/	/	/	/	/	/	/	a
74	NCAOEMT034	JERIN JOHN	/	/	/	/	/	a	/	/	/	/
75	NCAOEMT035	JERIN T SUNNY	a	/	/	/	/	/	/	/	/	/
76	NCAOEMT036	JESEERA V P	/	/	a	/	/	/	/	/	/	/
77	NCAOEMT037	JINO G THOMAS	/	/	a	/	/	/	/	/	/	/
78	NCAOEMT038	JINU P M	/	/	/	/	a	/	/	/	/	a
79	NCAOEMT039	JITHIN JOSE	a	/	/	/	/	/	a	/	/	/
80	NCAOEMT040	JOHN JOE PADUA	/	/	a	/	/	/	a	/	/	/
81	NCAOEMT041	KAKKAT ALI IBRAHIM	/	/	/	a	/	a	/	/	/	/
82	NCAOEMT042	MOHAMMED NIBRAS YOOSUF K	/	/	/	/	/	/	/	/	a	a
83	NCAOEMT043	MOYALAN JINTO JOSAN	a	/	/	/	a	/	/	/	/	/
84	NCAOEMT044	NAVEEN GOPI	/	/	/	/	/	a	/	a	/	/
85	NCAOEMT045	RAHIL V A	/	/	a	/	/	/	/	a	/	/
86	NCAOEMT051	SARANG P	/	a	/	/	/	/	/	/	a	/
87	NCAOEMT052	SAWAD K J	a	/	/	/	a	/	/	/	/	/
88	NCAOEMT053	SETHUMADHAVAN K	/	/	/	/	/	a	/	/	a	/
89	NCAOEMT054	SHINILNATH	a	/	/	/	a	/	/	/	/	/
90	NCAOEMT055	SIDHARTH N PISHARODY	/	/	/	/	/	/	/	a	/	/
91	NCAOEMT056	SRIRAG	/	a	/	/	/	/	/	/	/	/
92	NCAOEMT057	THAHA MOHAMMED TM	/	/	/	/	/	a	a	/	/	/
93	NCAOEMT058	VISHNU K ANAND	a	/	/	/	/	/	/	/	/	a
94	NCAOEMT059	AKHIL KRISHNAN T	/	/	/	a	a	/	/	/	/	/
95	NCAOEMT060	SUJEETH	/	/	/	/	/	/	/	a	a	/
96	NCAOEMT061	NOBLE VARGHESE	/	/	a	/	/	/	/	/	/	a
97	NCAOEMT062	SHAMEER T K	/	/	a	/	/	/	a	/	/	/
98	NCAOEMT063	VISHNU K	a	/	/	/	/	a	/	/	/	/
99	NCE15MC001	ABHIJITH DINESH	/	/	/	/	/	/	/	a	/	/
100	NCE15MC002	ABIJITH U K	/	/	/	/	/	/	/	/	a	/
101	NCE15MC003	ADITHYA SURESH	/	a	/	/	/	/	/	/	/	/
102	NCE15MC004	ADITHYA MOHAN	a	/	/	/	/	/	/	/	/	/
103	NCE15MC005	AJAY ANAND C	/	/	/	/	/	/	/	/	/	a

PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Doddanarayana Thiruvilwamala, Thiruvur Dt.

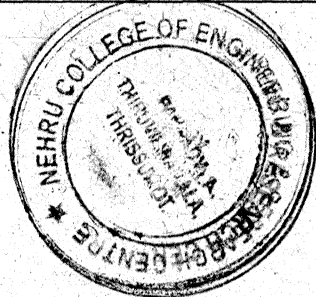



104	NCE15MC006	AKASH A	/	/	/	a	/	/	/	/	a	/
105	NCE15MC007	AKHIL CHAND P P	a	/	/	/	/	/	a	/	/	/
106	NCE15MC008	AKSHAYLAL M R	/	/	a	/	/	a	/	a	/	/
107	NCE15MC009	ALBIN LEO	/	/	a	/	/	a	/	/	/	/
108	NCE15MC010	ALIND ROY	/	a	/	/	/	/	/	/	/	a
109	NCE15MC011	AMARJITH VINOD	/	/	/	a	a	/	/	/	/	/
110	NCE15MC012	ANTONY SEBASTIAN KACHAPALLY	/	/	a	/	/	/	a	/	/	/
111	NCE15MC013	ANUPAMA R NATH	/	/	/	/	/	/	a	/	/	a
112	NCE15MC014	ARJUN S	a	/	/	/	/	a	/	/	/	/
113	NCE15MC021	DEEPAK SUNIL	/	/	/	a	a	/	/	/	/	/
114	NCE15MC022	DEEPU VINIL	/	/	/	/	/	a	/	/	a	/
115	NCE15MC023	GOVIND K A	/	a	/	/	/	/	/	/	a	/
116	NCE15MC024	HARIHARAN C G	/	/	a	/	/	/	/	a	/	/
117	NCE15MC025	JEFINA TERESA JOHNSON	/	/	/	/	a	/	/	/	/	a
118	NCE15MC026	JEROM MATHEW PAUL	/	a	/	/	a	/	/	/	/	/
119	NCE15MC027	JITHIN T J	a	/	/	a	/	/	/	/	/	/
120	NCE15MC028	JOHNSON K JOSE	/	/	/	/	/	/	a	a	/	/
121	NCE15MC029	JOSEPH JITHIN PAUL	/	a	/	/	/	a	/	/	/	/
122	NCE15MC030	JOVIN DAVIS T	/	a	/	/	/	/	a	/	/	/
123	NCE15MC031	JUBY ELIZEBETH JOHN	/	/	/	a	/	/	/	/	/	a
124	NCE15MC032	JUSTIN JOSE	/	/	a	/	/	/	a	/	/	/
125	NCE15MC033	KENES CHRIS	a	/	/	/	/	a	/	/	/	/
126	NCE15MC034	KIRAN GEORGE	/	/	/	/	a	/	/	a	/	/
127	NCE15MC035	MARSHEL MARTIN	/	/	/	/	/	/	/	a	/	a
128	NCE15MC036	MOHAMMED HANI SHERIF	/	a	/	/	/	/	/	a	/	/
129	NCE15MC037	MOHAMED JUNAID M C	/	/	/	a	/	/	a	/	/	/
130	NCE15MC038	MOHAMED SHAROOK KHAN	a	/	/	/	/	/	/	/	a	/
131	NCE15MC040	MOHAMMED SUHAIL T S	/	/	/	a	/	/	/	/	a	/
132	NCE15MC041	MUHAMMED NAMEER P	/	a	a	/	/	/	/	/	/	/
133	NCE15MC042	NAKUL BHASKAR	/	/	/	/	a	a	/	/	/	/
134	NCE15MC046	RESHMA S	a	/	/	/	/	/	/	/	a	/
135	NCE15MC048	ROHIT JACOB ROBERT	/	/	/	/	a	/	/	a	/	/
136	NCE15MC049	SACHIN A S	a	/	/	/	/	/	/	/	/	a
137	NCE15MC050	SAGAR JOHNY C	/	/	/	/	/	a	a	/	/	/
138	NCE15MC051	SARAS MOHAN	/	/	a	a	/	/	/	/	/	/
139	NCE15MC052	SARUN R KUMAR	/	/	a	/	/	/	/	/	a	/
140	NCE15MC053	SPENCER DAVID	/	/	/	/	/	/	/	/	a	a
141	NCE15MC054	SREEJITH S	a	/	/	/	/	/	/	a	/	/



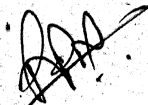

**PRINCIPAL**  
 Nehru College of  
 Engineering and Research Centre  
 Damuday Thiruvilwamala, Thiruvananthapuram Dt  
 Kerala

142	NCE15MC055	SREERAG K R	a	/	/	/	/	a	/	/	/	/
143	NCE15MC056	SUDHARSHAN K	/	/	/	a	a	/	/	/	/	/
144	NCE15MC057	SUDHEESH S	/	a	/	/	/	/	/	a	/	/
145	NCE15MC058	VISHNU P V	/	/	a	/	/	/	/	/	/	a
146	NCE15MC059	VISHNU CHANDRAN N	/	/	/	/	/	a	/	/	/	/
147	NCE15MC060	VISHNU RAJ P	/	/	/	a	/	/	/	/	/	a
148	LNCE15MC067	DHEERAJ S	/	a	/	/	/	/	/	/	a	/
149	LNCE15MC068	JAYAKRISHNAN A R	a	/	/	/	a	/	/	/	/	/
150	LNCE15MC069	JOBIN JOSEPH	/	/	/	/	a	/	a	/	/	/
151	LNCE15MC070	SREEVINAYAK P V	a	/	/	/	/	/	/	/	/	a
152	NCE16MC001	ABDUL HAMEED V M	/	/	/	/	/	/	/	/	/	a
153	NCE16MC002	ADITH SUNDER C	/	/	/	a	/	/	a	/	/	/
154	NCE16MC003	AKASH KRISHNAN A	/	a	/	/	/	/	a	/	/	/
155	NCE16MC004	AKHIL REGHUNATH	/	/	/	/	/	/	a	/	a	/
156	NCE16MC005	AMAL DAS T S	/	/	a	/	a	/	/	/	/	/
157	NCE16MC006	AMAL J ANTONY	/	/	/	/	/	a	/	/	a	/
158	NCE16MC007	AMALJITH K	/	a	/	/	/	a	/	/	/	/
159	NCE16MC008	AMAL M A	a	/	/	/	/	/	/	a	/	/
160	NCE16MC009	ANIL C A	/	/	/	/	/	/	/	/	a	a
161	NCE16MC010	ANSELM LINSON	/	/	a	a	/	/	/	/	/	/
162	NCE16MC011	ANTONY KOMBAN WINSON	a	/	/	/	/	/	/	a	/	/
163	NCE16MC013	ATHUL KRISHNA M J	/	a	/	/	/	/	a	/	/	/
164	NCE16MC014	BASIL JOY	/	/	/	a	a	/	/	/	/	/
165	NCE16MC018	GOVARDHAN P B	a	/	/	/	/	a	/	/	/	/
166	NCE16MC019	ISSAC K JOY	/	/	/	/	/	/	a	/	/	a
167	NCE16MC020	JIJAY KRISHNA M	/	a	/	/	/	/	/	/	/	a
168	NCE16MC021	JITHIN CHERIYAN	/	/	/	a	/	/	/	/	a	/
169	NCE16MC022	JITHIN T	/	a	/	/	/	p	/	/	/	/
170	NCE16MC023	JITHIN T J	/	/	/	a	/	/	/	/	/	/
171	NCE16MC026	MERRIL DANIEL ROY	/	a	/	/	/	/	/	/	/	a
172	NCE16MC027	MUHAMMED BASIL S	a	/	/	/	a	/	/	/	/	/
173	NCE16MC028	MUHAMMED SHAFI K	/	/	/	/	/	/	a	/	/	a
174	NCE16MC029	NIKHIL	/	/	a	/	/	/	/	/	a	/

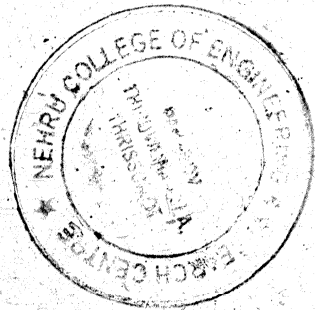


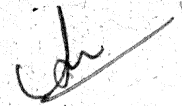
  
**PRINCIPAL**  
 Nehru College of  
 Engineering and Research Centre  
 Pampady Thiruvananthapuram, Thiruvananthapuram Dt  
 Pin 680 597 Kerala

175	NCE16MC030	NOURIN	a	/	/	/	/	/	/	/	/	/
176	NCE16MC031	PRATHIBHA P K	/	/	/	a	/	/	/	a	/	/
177	NCE16MC032	RAHUL RAMESH	/	/	d	/	/	a	/	/	/	/
178	NCE16MC033	RAMEES N	/	/	/	a	a	/	/	/	/	/
179	NCE16MC034	ROBIN JOSEPH	/	/	/	/	/	/	a	/	/	a
180	NCE16MC036	ROSHAN SATHAR A	/	/	a	/	/	/	/	a	/	/
181	NCE16MC037	R VISHNU PRASATH	/	/	/	/	/	g	/	/	/	/
182	NCE16MC040	SHAROOQUE SHAJAHAN	a	/	/	/	a	/	/	/	/	/
183	NCE16MC041	SIDHARTH S	/	/	a	/	/	/	/	/	/	a
184	NCE16MC042	SIMON THOMAS	/	/	/	/	/	/	/	/	a	/
185	NCE16MC043	SMRUTHI RANJITH	/	a	/	/	a	/	/	/	/	/
186	NCE16MC044	SREEHARI K NAIR	a	/	/	/	/	/	/	a	/	/

  
PROGRAM COORDINATOR

  
HOD



  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady, Thrissur, Kerala  
Pin - 680 507 Kerala

**NEHRU COLLEGE OF ENGINEERING & RESEARCH CENTRE**

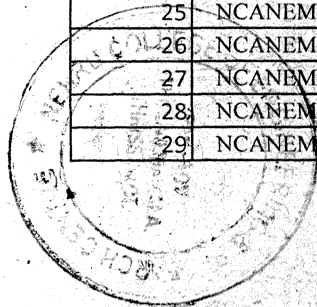
Pampady, Thiruvilwamala, Thrissur Dt.

**DEPARTMENT OF MECHATRONICS ENGINEERING**

**REFRIGERATION AND AIRCONDITIONING**

Attendance Sheet

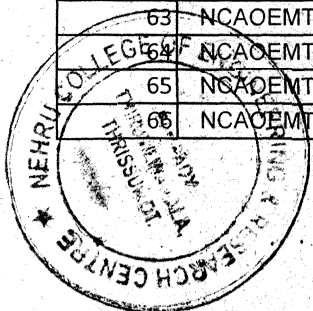
SL. NO.	REG. NO.	NAME OF STUDENT	3/9/16	3/9/16	5/9/16	6/9/16	7/9/16	8/9/16	9/9/16	10/9/16	10/9/16	10/9/16
1	NCANEMT002	ADITHYA SURESH	a	/	/	/	/	/	/	/	/	/
2	NCANEMT003	AKARSH S	/	/	/	a	/	/	/	/	/	a
3	NCANEMT004	AKSHAY CHANDRAN	/	/	/	/	/	/	/	a	/	/
4	NCANEMT005	AKSHAY M	/	a	/	/	/	/	/	/	/	/
5	NCANEMT006	ALOSHIOUS M DASAN	/	/	/	/	/	/	a	/	/	/
6	NCANEMT007	ALTHAF MOHAMMED M	/	/	/	/	a	/	/	/	/	/
7	NCANEMT008	ANARGH VISWANATH	/	/	a	/	/	/	/	/	/	/
8	NCANEMT010	ANEESH K A	a	/	/	/	/	/	/	/	/	/
9	NCANEMT013	ARJUN K G	/	/	/	/	/	/	/	/	a	/
10	NCANEMT014	ARJUN P MENON	/	/	/	/	/	/	a	/	/	/
11	NCANEMT015	ARJUN VYSAKH C	/	/	/	a	/	/	/	/	/	/
12	NCANEMT016	ARJUN VIJAY	a	/	/	/	/	/	/	/	/	/
13	NCANEMT017	ASHWIN K J	/	/	/	/	a	/	/	/	/	/
14	NCANEMT018	ASHWIN VARGHESE	/	/	/	/	/	/	/	a	/	/
15	NCANEMT019	ATHUL AJITH K	/	/	a	/	/	/	/	/	/	/
16	NCANEMT021	AVINASH SEN	/	/	/	/	/	/	a	/	/	/
17	NCANEMT022	CIBIN JOHN JOSEPH	a	/	/	/	/	/	/	/	/	/
18	NCANEMT023	DINILKUMAR K	/	a	/	/	/	/	/	/	/	/
19	NCANEMT024	EBIN SUNNY	/	/	/	/	/	a	/	a	/	/
20	NCANEMT025	EMIL TOM	/	/	/	/	/	/	/	/	/	a
21	NCANEMT026	FREDIN V JOSE	/	/	/	/	/	a	/	/	/	/
22	NCANEMT027	HARIKRISHNAN P	/	/	/	/	/	/	/	/	a	/
23	NCANEMT028	IRSHAD MOHAMED GHANI	/	/	/	/	a	/	/	/	/	/
24	NCANEMT029	JERIN JOSE	/	a	/	/	/	/	/	/	/	/
25	NCANEMT030	JITHESH V K	/	/	a	/	/	/	/	/	/	/
26	NCANEMT031	JITHU J	a	/	/	/	/	/	/	/	/	/
27	NCANEMT032	JYOTHISH M N	/	/	a	/	/	/	/	/	/	a
28	NCANEMT033	MUHAMMED BADSHA	/	/	/	/	a	/	/	/	/	/
29	NCANEMT034	MOHAMMED MISHAL K	/	/	/	/	/	/	/	a	/	/

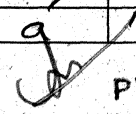


*[Handwritten Signature]*

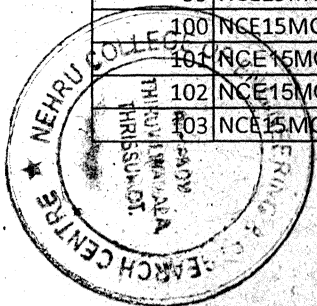
**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thrissur Dt.  
Pin - 686 601 Kerala

30	NCANEMT038	PRAVEEN A S	/	a	/	/	/	/	/	/	/	/
31	NCANEMT039	PRAVEEN PRAKASH	/	/	a	/	/	/	/	/	/	/
32	NCANEMT040	RAMKUMAR	/	/	/	/	/	/	/	/	a	/
33	NCANEMT041	RIBIN MATHEW	/	/	/	/	/	/	/	a	/	/
34	NCANEMT042	RIDUL RAZWIN M R	/	/	/	a	/	/	/	/	/	/
35	NCANEMT043	SANAL P	/	/	/	/	a	/	/	/	/	/
36	NCANEMT044	SAYOOJ T K	/	/	/	/	/	a	a	/	/	/
37	NCANEMT045	SHAHSAD M	/	/	/	/	/	a	/	/	/	/
38	NCANEMT046	SHYAMAPRASAD O K	/	/	/	/	/	/	/	/	/	a
39	NCANEMT047	SIDDARTH A T	a	/	/	/	/	/	/	/	/	/
40	NCANEMT048	SREEJITH P G	/	/	/	/	/	/	/	/	a	/
41	NCANEMT049	SRUTHY S NAIR	/	/	a	/	/	/	/	/	/	/
42	NCANEMT050	VISHNUDAS M	/	/	/	/	a	/	/	a	/	/
43	NCANEMT051	VISHNU PRASAD	/	/	/	a	/	/	/	/	/	/
44	NCANEMT052	JASEEL P	/	/	/	/	/	/	a	/	a	/
45	NCANEMT053	SOUMYA A K	/	/	a	/	/	/	/	/	/	/
46	NCANEMT054	VARSHA C K	/	/	/	/	/	/	/	/	/	/
47	NCAOEMT001	AAZTLEKHAN N	/	a	/	/	/	/	/	/	/	a
48	NCAOEMT002	ABDULLA NAJID C P	a	/	/	/	/	/	/	/	/	/
49	NCAOEMT003	ABHIJITH JOHN	/	/	/	/	/	a	/	/	/	/
50	NCAOEMT004	ABY POIUSON	/	/	/	a	/	/	/	/	a	/
51	NCAOEMT005	ADARSH MOHAN	/	a	/	/	/	/	/	/	/	/
52	NCAOEMT006	AISWARYA UNNI	/	/	/	/	/	/	/	/	/	/
53	NCAOEMT007	AJAY AUGUSTINE	/	/	/	/	/	/	/	a	/	/
54	NCAOEMT008	AKHIL A	a	/	/	/	/	/	/	/	/	/
55	NCAOEMT009	AKHIL JOSEPH	/	/	/	/	/	/	/	/	/	a
56	NCAOEMT010	AKSHAY R	/	/	a	/	/	/	/	/	a	/
57	NCAOEMT011	ALEN BABY	/	/	/	/	a	/	/	/	/	/
58	NCAOEMT012	ALISHIHAN M S	/	/	/	/	/	/	a	/	/	/
59	NCAOEMT013	ANAND A S	/	/	a	/	a	/	/	/	/	/
60	NCAOEMT014	ANANDHU K V	/	a	/	/	/	/	/	/	/	/
61	NCAOEMT015	ANANTHU K S	a	/	/	/	/	/	/	/	/	/
62	NCAOEMT022	BASIL T ABRAHAM	/	/	/	/	/	/	a	/	a	/
63	NCAOEMT023	DERVISH HUSSAIN V	/	/	/	a	/	/	/	/	/	/
64	NCAOEMT024	EDWIN JOHNY	/	/	a	/	/	/	/	/	/	/
65	NCAOEMT025	ERSHINADH K KRISHNA	a	/	/	/	/	/	/	/	a	/
66	NCAOEMT026	FEMINA SHIREEN A	/	/	/	/	/	/	a	/	/	a



  
**PRINCIPAL**  
 Nehru College of  
 Engineering and Research Centre  
 Panpady Thiruvilwamala, Thiruvananthapuram Dt  
 Pin - 680 597, Kerala

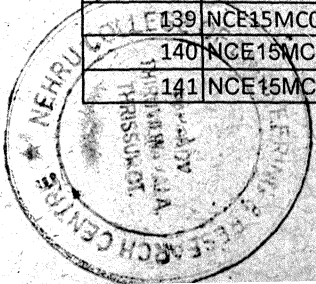
67	NCAOEMT027	FREDIN V JAMES	a	/	/	/	/	/	/	/	/	/
68	NCAOEMT028	GAUTHAM KRISHNA S	/	/	/	/	/	/	/	/	/	a
69	NCAOEMT029	GOPIKA M S	/	/	/	/	/	/	/	/	a	/
70	NCAOEMT030	GOVIND K	/	/	a	/	/	/	/	/	/	/
71	NCAOEMT031	HARIKRISHNAN N	/	/	/	/	/	a	/	/	/	/
72	NCAOEMT032	ISHAN HUSSAIN KALAKKAT	/	/	/	/	a	/	/	/	/	/
73	NCAOEMT033	JEEN M JOY	/	/	/	/	a	/	/	/	/	/
74	NCAOEMT034	JERIN JOHN	/	/	/	/	/	/	/	/	/	a
75	NCAOEMT035	JERIN T SUNNY	a	a	/	/	/	/	/	/	/	/
76	NCAOEMT036	JESEERA V P	/	/	/	/	/	/	/	/	a	/
77	NCAOEMT037	JINO G THOMAS	/	/	/	/	/	/	/	a	/	/
78	NCAOEMT038	JINU P M	/	/	a	/	/	/	/	/	/	/
79	NCAOEMT039	JITHIN JOSE	a	/	/	/	/	/	/	/	/	/
80	NCAOEMT040	JOHN JOE PADUA	/	/	/	/	a	/	/	/	/	/
81	NCAOEMT041	KAKKAT ALI IBRAHIM	/	/	/	/	/	/	a	/	/	/
82	NCAOEMT042	MOHAMMED NIBRAS YOOSUF K	/	/	/	/	/	a	/	/	/	/
83	NCAOEMT043	MOYALAN JINTO JOSAN	/	a	/	/	/	/	/	/	/	/
84	NCAOEMT044	NAVEEN GOPI	/	/	/	/	/	/	/	/	a	/
85	NCAOEMT045	RAHIL V A	/	/	/	/	a	/	/	/	/	/
86	NCAOEMT051	SARANG P	/	/	a	/	/	/	/	/	/	/
87	NCAOEMT052	SAWAD K J	a	/	/	/	/	/	/	/	/	/
88	NCAOEMT053	SETHUMADHAVAN K	/	/	/	/	/	/	/	/	/	a
89	NCAOEMT054	SHINILNATH	/	/	/	/	/	/	/	a	/	/
90	NCAOEMT055	SIDHARTH N PISHARODY	/	/	/	/	/	a	/	/	/	/
91	NCAOEMT056	SRIRAG	/	/	/	a	/	/	/	/	/	/
92	NCAOEMT057	THAHA MOHAMMED TM	/	a	/	/	/	/	/	/	/	/
93	NCAOEMT058	VISHNU K ANAND	a	/	/	/	/	/	/	/	/	/
94	NCAOEMT059	AKHIL KRISHNAN T	a	/	/	/	/	/	/	/	/	/
95	NCAOEMT060	SUJEETH	/	/	a	/	/	/	/	/	/	/
96	NCAOEMT061	NOBLE VARGHESE	/	/	/	/	a	/	/	/	/	/
97	NCAOEMT062	SHAMEER T K	/	/	/	/	/	/	a	/	/	/
98	NCAOEMT063	VISHNU-K	/	/	/	/	/	/	/	/	a	/
99	NCE15MC001	ABHIJITH DINESH	a	/	/	/	/	/	/	/	/	a
100	NCE15MC002	ABIJITH U K	/	/	/	/	/	/	/	/	/	a
101	NCE15MC003	ADITHYA SURESH	/	a	/	/	/	/	/	a	/	/
102	NCE15MC004	ADITHYA MOHAN	/	/	/	/	/	a	/	/	/	/
103	NCE15MC005	AJAY ANAND C	/	/	/	a	/	/	/	/	/	/




*[Handwritten signature]*

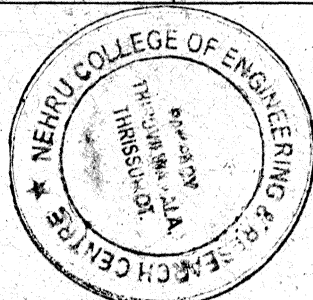
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala, Thrissur-Dt  
Ph: 689 507 6244


104	NCE15MC006	AKASH A	/	/	/	/	/	/	/	/	/	a
105	NCE15MC007	AKHIL CHAND P P	/	a	/	/	/	/	/	/	/	/
106	NCE15MC008	AKSHAYLAL M R	/	/	/	a	/	/	/	a	/	/
107	NCE15MC009	ALBIN LEO	/	/	/	a	/	/	/	/	/	/
108	NCE15MC010	ALIND ROY	/	/	/	/	a	a	/	/	/	/
109	NCE15MC011	AMARJITH VINOD	/	/	/	/	a	/	/	/	/	/
110	NCE15MC012	ANTONY SEBASTIAN KACHAPALLY	a	/	/	/	/	/	/	/	a	/
111	NCE15MC013	ANUPAMA R NATH	/	/	/	/	/	/	a	/	/	/
112	NCE15MC014	ARJUN S	/	a	/	/	/	/	/	/	/	/
113	NCE15MC021	DEEPAK SUNIL	/	/	/	/	/	a	/	/	/	/
114	NCE15MC022	DEEPU VINIL	/	/	a	/	/	/	/	/	/	/
115	NCE15MC023	GOVIND K A	/	/	/	/	a	/	/	/	/	/
116	NCE15MC024	HARIHARAN C G	/	/	/	/	/	/	a	/	/	/
117	NCE15MC025	JEFINA TERESA JOHNSON	a	/	/	/	/	/	/	/	/	/
118	NCE15MC026	JEROM MATHEW PAUL	/	/	/	/	/	/	/	/	/	a
119	NCE15MC027	JITHIN T J	/	/	/	/	/	/	/	a	/	/
120	NCE15MC028	JOHNSON K JOSE	a	/	/	/	/	/	/	/	/	/
121	NCE15MC029	JOSEPH JITHIN PAUL	/	/	/	/	/	/	a	/	/	/
122	NCE15MC030	JOVIN DAVIS T	/	/	a	/	/	/	/	/	/	/
123	NCE15MC031	JUBY ELIZEBETH JOHN	/	/	/	/	/	/	/	/	a	/
124	NCE15MC032	JUSTIN JOSE	/	/	/	/	a	/	/	/	/	/
125	NCE15MC033	KENES CHRIS	/	/	/	/	/	/	/	/	/	a
126	NCE15MC034	KIRAN GEORGE	a	/	/	/	/	/	/	/	/	/
127	NCE15MC035	MARSHEL MARTIN	/	/	/	/	/	/	/	a	/	/
128	NCE15MC036	MOHAMMED HANI SHERIF	/	/	a	/	/	/	/	/	/	/
129	NCE15MC037	MOHAMED JUNAID M C	/	a	/	/	/	/	/	/	/	/
130	NCE15MC038	MOHAMED SHAROOK KHAN	/	/	/	/	/	/	a	/	/	/
131	NCE15MC040	MOHAMMED SUHAIL T S	/	/	/	/	/	a	a	/	/	/
132	NCE15MC041	MUHAMMED NAMEER P	/	/	/	a	/	/	/	/	/	/
133	NCE15MC042	NAKUL BHASKAR	/	/	/	a	/	/	/	/	/	/
134	NCE15MC046	RESHMA S	a	/	/	/	/	/	/	/	/	/
135	NCE15MC048	ROHIT JACOB ROBERT	/	/	/	/	/	/	/	/	a	/
136	NCE15MC049	SACHIN A S	/	/	/	/	/	/	/	/	a	/
137	NCE15MC050	SAGAR JOHNY C	/	/	/	/	/	a	/	/	/	/
138	NCE15MC051	SARAS MOHAN	/	/	/	/	a	/	/	/	/	/
139	NCE15MC052	SARUN R KUMAR	/	/	a	/	/	/	/	/	/	/
140	NCE15MC053	SPENCER DAVID	/	a	/	/	/	/	/	/	/	/
141	NCE15MC054	SREEJITH S	/	/	/	/	/	/	/	a	/	/



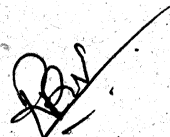
  
**PRINCIPAL**  
 Nehru College of  
 Engineering and Research Centre,  
 Pampady, Thissur, Thissur Dt.  
 Kerala

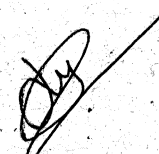
142	NOE15MC055	SREERAG K R	/	/	/	/	/	a	/	/	/	/
143	NCE15MC056	SUDHARSHAN K	a	/	/	/	/	/	/	/	/	/
144	NCE15MC057	SUDHEESH S	/	/	/	/	a	/	/	/	/	a
145	NCE15MC058	VISHNU P V	/	a	/	/	/	/	/	/	/	/
146	NCE15MC059	VISHNU CHANDRAN N	/	/	/	a	/	/	/	/	a	/
147	NCE15MC060	VISHNU RAJ P	/	/	/	/	/	a	/	/	/	a
148	LNCE15MC067	DHEERAJ S	/	/	a	/	a	/	/	/	/	a
149	LNCE15MC068	JAYAKRISHNAN A R	/	/	/	/	/	/	/	a	/	/
150	LNCE15MC069	JOBIN JOSEPH	/	/	/	/	/	a	/	/	/	/
151	LNCE15MC070	SREEVINAYAK P V	/	/	/	/	/	/	a	/	/	a
152	NCE16MC001	ABDUL HAMEED V M	/	a	/	/	/	/	/	/	/	/
153	NCE16MC002	ADITH SUNDER C	/	/	/	a	/	/	/	/	/	/
154	NCE16MC003	AKASH KRISHNAN A	/	/	/	/	/	a	/	/	/	/
155	NCE16MC004	AKHIL REGHUNATH	/	/	/	/	/	/	/	a	/	/
156	NCE16MC005	AMAL DAS T S	/	/	/	/	a	/	/	/	/	/
157	NCE16MC006	AMAL J ANTONY	/	/	/	a	/	/	/	/	/	/
158	NCE16MC007	AMALJITH K	a	/	/	/	/	/	/	/	a	a
159	NCE16MC008	AMAL M A	/	/	/	/	/	/	/	/	a	/
160	NCE16MC009	ANIL C A	/	/	/	/	/	/	a	/	/	/
161	NCE16MC010	ANSELM LINSON	a	/	/	/	/	/	/	/	/	/
162	NCE16MC011	ANTONY KOMBAN WINSON	/	/	a	/	/	/	/	/	/	/
163	NCE16MC013	ATHUL KRISHNA M J	/	/	/	/	/	/	/	a	/	/
164	NCE16MC014	BASIL JOY	/	a	/	/	/	a	/	/	/	/
165	NCE16MC018	GOVARDHAN P B	/	/	/	a	/	/	/	/	/	/
166	NCE16MC019	ISSAC K JOY	/	/	/	/	/	/	/	/	/	/
167	NCE16MC020	JIJAY KRISHNA M	a	/	/	/	/	/	/	/	/	/
168	NCE16MC021	JITHIN CHERIYAN	/	/	/	/	/	/	/	a	/	/
169	NCE16MC022	JITHIN T	/	/	a	/	/	/	/	/	/	/
170	NCE16MC023	JITHIN T J	/	/	/	/	a	/	/	/	/	a
171	NCE16MC026	MERRIL DANIEL ROY	/	/	a	/	/	/	a	/	/	/
172	NCE16MC027	MUHAMMED BASIL S	/	a	/	/	/	/	/	/	/	/
173	NCE16MC028	MUHAMMED SHAFI K	/	/	/	/	a	/	/	/	a	/
174	NCE16MC029	NIKHIL	a	/	/	/	/	/	/	/	a	/

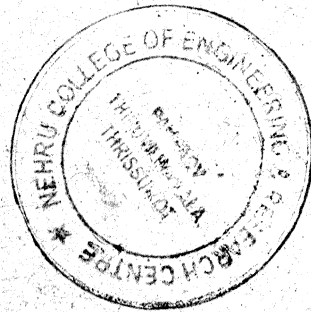


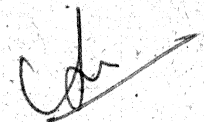
  
**PRINCIPAL**  
 Nehru College of  
 Engineering and Research Centre  
 Pattipady, Thiruvananthapuram, Kerala Dt  
 Pin - 695 011, India

175	NCE16MC030	NOURIN	/	/	/	a	/	/	/	/	a	/
176	NCE16MC031	PRATHIBHA P K	a	/	/	/	/	/	a	/	/	/
177	NCE16MC032	RAHUL RAMESH	/	/	/	/	a	/	/	/	/	/
178	NCE16MC033	RAMEES N	/	a	/	/	/	/	/	/	/	a
179	NCE16MC034	ROBIN JOSEPH	/	/	/	a	/	/	/	/	/	/
180	NCE16MC036	ROSHAN SATHAR A	a	/	/	/	/	/	/	/	/	/
181	NCE16MC037	R VISHNU PRASATH	/	/	/	/	/	/	/	/	a	/
182	NCE16MC040	SHAROOQUE SHAJAHAN	/	/	a	/	/	/	/	/	a	/
183	NCE16MC041	SIDHARTH S	/	/	/	/	/	/	/	a	/	/
184	NCE16MC042	SIMON THOMAS	/	/	/	/	/	a	/	/	/	/
185	NCE16MC043	SMRUTHI RANJITH	/	a	/	/	/	/	/	/	/	a
186	NCE16MC044	SREEHARI K NAIR	/	/	/	/	/	/	a	/	/	/

  
PROGRAM COORDINATOR

  
HOD



  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Panipatt, Thiruvananthapuram, Thiruvananthapuram Dt  
Pin - 696 597, Kerala

**NEHRU COLLEGE OF ENGINEERING & RESEARCH CENTRE**

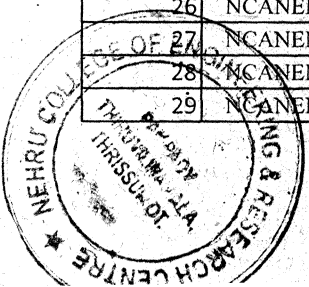
Pampady, Thiruvilwamala, Thrissur Dt.

**DEPARTMENT OF MECHATRONICS ENGINEERING**

**REFRIGERATION AND AIRCONDITIONING**

Attendance Sheet

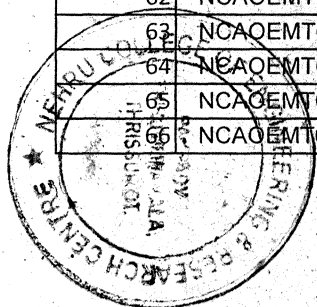
SL. NO.	REG. NO.	NAME OF STUDENT	22/9/16	23/9/16	24/9/16	28/9/16	30/9/16	1/10/16	3/10/16	4/10/16	5/10/16	6/10/16
1	NCANEMT002	ADITHYA SURESH	/	/	/	/	/	a	/	/	/	a
2	NCANEMT003	AKARSH S	a	/	/	/	/	/	/	/	/	/
3	NCANEMT004	AKSHAY CHANDRAN	/	/	/	/	/	/	/	/	a	/
4	NCANEMT005	AKSHAY M	/	a	/	a	/	/	/	/	/	/
5	NCANEMT006	ALOSHIOUS M DASAN	/	/	/	/	/	/	a	/	/	/
6	NCANEMT007	ALTHAF MOHAMMED M	/	/	/	/	a	/	/	/	/	/
7	NCANEMT008	ANARGH VISWANATH	a	/	/	/	/	/	/	/	/	/
8	NCANEMT010	ANEESH K A	/	/	a	/	/	/	/	/	/	/
9	NCANEMT013	ARJUN K G	/	/	/	/	/	a	/	/	/	/
10	NCANEMT014	ARJUN P MENON	/	/	/	/	/	/	/	a	/	/
11	NCANEMT015	ARJUN VYSAKH C	/	/	/	/	/	/	/	/	/	a
12	NCANEMT016	ARJUN VIJAY	/	a	/	/	/	/	/	/	/	/
13	NCANEMT017	ASHWIN K J	/	/	/	a	/	/	/	/	/	/
14	NCANEMT018	ASHWIN VARGHESE	/	/	/	/	/	a	/	/	/	/
15	NCANEMT019	ATHUL AJITH K	/	/	/	/	/	/	/	a	/	/
16	NCANEMT021	AVINASH SEN	/	/	/	a	/	/	/	/	/	a
17	NCANEMT022	CIBIN JOHN JOSEPH	/	/	/	/	/	/	/	/	/	a
18	NCANEMT023	DINILKUMAR K	/	/	/	/	/	/	/	/	a	/
19	NCANEMT024	EBIN SUNNY	/	/	/	/	/	/	/	/	a	/
20	NCANEMT025	EMIL TOM	/	/	/	/	/	/	a	/	/	/
21	NCANEMT026	FREDIN V JOSE	/	a	/	/	/	/	/	/	/	/
22	NCANEMT027	HARIKRISHNAN P	a	/	/	/	/	/	/	/	/	/
23	NCANEMT028	IRSHAD MOHAMED GHANI	/	/	/	a	/	/	/	/	/	/
24	NCANEMT029	JERIN JOSE	/	/	/	/	/	a	/	/	/	/
25	NCANEMT030	JITHESH V K	/	/	/	/	a	/	/	a	/	/
26	NCANEMT031	JITHU J	/	/	/	/	/	/	/	/	/	a
27	NCANEMT032	JYOTHISH M N	/	a	/	/	/	/	/	/	/	/
28	NCANEMT033	MUHAMMED BADSHA	/	/	/	/	/	/	/	/	/	a
29	NCANEMT034	MOHAMMED MISHAL K	a	/	/	/	/	/	/	/	/	/



*Ch*

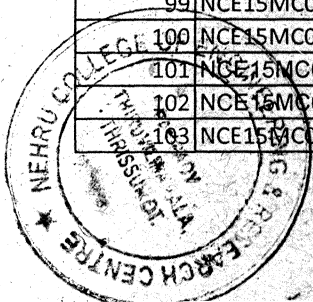
**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre

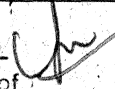
30	NCANEMT038	PRAVEEN A S	a	/	/	/	/	/	/	/	/	/
31	NCANEMT039	PRAVEEN PRAKASH	/	/	/	/	/	/	/	/	a	/
32	NCANEMT040	RAMKUMAR	/	a	/	/	/	/	/	/	/	/
33	NCANEMT041	RIBIN MATHEW	/	/	/	a	/	a	/	/	/	/
34	NCANEMT042	RIDUL RAZWIN M R	/	/	/	a	/	/	/	/	/	/
35	NCANEMT043	SANAL P	/	/	/	a	a	/	/	/	/	/
36	NCANEMT044	SAYOOJ T K	/	/	/	/	a	/	/	/	/	a
37	NCANEMT045	SHAHSAD M	/	/	/	/	/	/	/	/	/	a
38	NCANEMT046	SHYAMAPRASAD O K	a	/	/	/	/	/	/	/	/	/
39	NCANEMT047	SIDDARTH A T	/	/	/	/	/	/	/	/	a	/
40	NCANEMT048	SREEJITH P G	/	a	/	/	/	/	/	/	/	/
41	NCANEMT049	SRUTHY S NAIR	/	/	/	/	a	/	/	/	/	/
42	NCANEMT050	VISHNUDAS M	/	/	/	/	/	a	/	/	/	/
43	NCANEMT051	VISHNU PRASAD	/	/	/	/	/	a	/	/	/	/
44	NCANEMT052	JASEEL P	/	/	/	/	/	/	/	a	/	/
45	NCANEMT053	SOUMYA A K	/	/	a	/	/	/	/	/	/	/
46	NCANEMT054	VARSHA C K	/	/	/	/	/	/	/	/	a	/
47	NCAOEMT001	AAZTLEKHAN N	/	/	/	/	/	/	/	/	/	a
48	NCAOEMT002	ABDULLA NAJID C P	/	/	/	/	a	/	/	/	/	/
49	NCAOEMT003	ABHIJITH JOHN	/	/	/	a	/	/	/	/	/	/
50	NCAOEMT004	ABY POIUSON	/	a	/	/	/	/	/	/	/	/
51	NCAOEMT005	ADARSH MOHAN	a	/	/	/	/	a	a	/	/	/
52	NCAOEMT006	AISWARYA UNNI	/	/	a	/	/	a	a	/	/	/
53	NCAOEMT007	AJAY AUGUSTINE	/	/	a	/	/	/	/	/	/	/
54	NCAOEMT008	AKHIL A	/	/	/	/	a	/	/	/	/	/
55	NCAOEMT009	AKHIL JOSEPH	/	/	/	/	/	/	/	/	a	/
56	NCAOEMT010	AKSHAY R	/	/	/	/	/	/	/	/	/	a
57	NCAOEMT011	ALEN BABY	/	/	/	a	/	/	/	/	/	/
58	NCAOEMT012	ALISHIHAN M S	/	a	/	/	/	/	/	/	/	/
59	NCAOEMT013	ANAND A S	a	/	/	/	/	/	/	/	/	a
60	NCAOEMT014	ANANDHU K V	/	/	/	/	/	/	/	a	/	/
61	NCAOEMT015	ANANTHU K S	/	/	/	/	/	/	/	/	a	/
62	NCAOEMT022	BASIL T ABRAHAM	/	/	/	/	/	a	/	/	/	/
63	NCAOEMT023	DERVISH HUSSAIN V	/	/	/	a	/	/	/	/	/	/
64	NCAOEMT024	EDWIN JOHNY	/	/	a	/	/	/	/	/	/	/
65	NCAOEMT025	ERSHINADH K KRISHNA	/	a	/	/	/	/	/	/	/	/
66	NCAOEMT026	FEMINA SHIREEN A	/	/	/	/	/	/	a	/	/	/



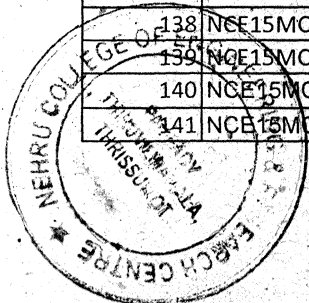
PRINCIPAL  
 Nehru College of  
 Engineering and Research Centre  
 Pampady, Thiruvilwamala, Thrissur Dt.

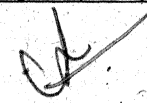
67	NCAOEMT027	FREDIN V JAMES	/	/	/	/	/	/	/	/	/	a
68	NCAOEMT028	GAUTHAM KRISHNA S	a	/	/	/	/	/	/	/	/	/
69	NCAOEMT029	GOPIKA M S	/	a	/	/	/	/	/	/	/	/
70	NCAOEMT030	GOVIND K	/	/	/	a	/	/	/	/	a	/
71	NCAOEMT031	HARIKRISHNAN N	/	/	/	/	a	/	/	/	/	/
72	NCAOEMT032	ISHAN HUSSAIN KALAKKAT	/	/	/	/	/	/	a	/	/	/
73	NCAOEMT033	JEEN M JOY	a	/	/	/	/	/	/	/	/	/
74	NCAOEMT034	JERIN JOHN	/	/	a	/	/	/	/	/	/	/
75	NCAOEMT035	JERIN T SUNNY	/	/	/	/	/	/	/	a	/	/
76	NCAOEMT036	JESEERA V P	/	/	/	/	/	/	/	/	/	a
77	NCAOEMT037	JINO G THOMAS	/	/	/	/	a	/	/	/	/	/
78	NCAOEMT038	JINU P M	/	/	/	/	/	/	/	/	a	/
79	NCAOEMT039	JITHIN JOSE	/	/	/	a	/	/	/	/	/	/
80	NCAOEMT040	JOHN JOE PADUA	/	/	/	/	/	/	a	/	/	/
81	NCAOEMT041	KAKKAT ALI IBRAHIM	/	/	/	/	a	/	/	/	/	/
82	NCAOEMT042	MOHAMMED NIBRAS YOOSUF K	/	a	/	/	/	/	/	/	/	/
83	NCAOEMT043	MOYALAN JINTO JOSAN	/	a	/	/	/	/	/	/	/	/
84	NCAOEMT044	NAVEEN GOPI	a	/	/	/	/	/	/	/	/	/
85	NCAOEMT045	RAHIL V A	/	/	a	/	/	/	/	/	/	/
86	NCAOEMT051	SARANG P	/	/	/	/	/	/	/	/	a	/
87	NCAOEMT052	SAWAD K J	/	/	/	/	/	a	/	/	/	/
88	NCAOEMT053	SETHUMADHAVAN K	/	/	/	/	/	/	/	/	/	a
89	NCAOEMT054	SHINILNATH	/	/	/	/	/	/	/	a	/	/
90	NCAOEMT055	SIDHARTH N PISHARODY	/	/	/	/	/	/	a	/	/	/
91	NCAOEMT056	SRIRAG	a	/	/	/	/	/	/	/	/	/
92	NCAOEMT057	THAHA MOHAMMED TM	/	a	/	/	/	/	/	/	/	/
93	NCAOEMT058	VISHNU K ANAND	/	/	a	/	/	/	/	/	/	/
94	NCAOEMT059	AKHIL KRISHNAN T	/	/	/	/	a	/	/	/	/	/
95	NCAOEMT060	SUJEETH	/	/	/	/	a	/	/	a	/	/
96	NCAOEMT061	NOBLE VARGHESE	/	/	/	/	/	/	/	/	/	a
97	NCAOEMT062	SHAMEER T K	/	/	/	/	/	/	/	/	/	a
98	NCAOEMT063	VISHNU K	a	/	/	/	/	/	/	/	/	/
99	NCE15MC001	ABHIJITH DINESH	/	/	/	/	/	/	/	a	/	/
100	NCE15MC002	ABJITH U K	/	/	/	/	/	/	a	/	/	/
101	NCE15MC003	ADITHYA SURESH	/	/	/	/	/	/	a	/	/	/
102	NCE15MC004	ADITHYA MOHAN	/	/	/	/	/	/	/	/	/	/
103	NCE15MC005	AJAY ANAND C	a	/	/	/	/	/	/	/	/	/



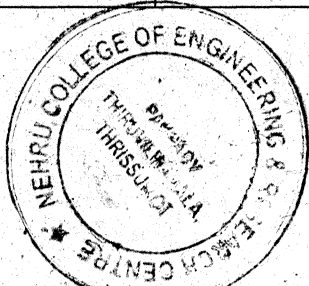
PRINCIPAL   
Nehru College of  
Engineering and Research Centre  
Thiruvananthapuram

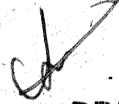
104	NCE15MC006	AKASH A	a	/	/	/	/	/	/	/	/	/
105	NCE15MC007	AKHIL CHAND P P	a	/	/	/	/	/	/	/	/	/
106	NCE15MC008	AKSHAYLAL M R	/	/	/	/	/	/	/	/	/	a
107	NCE15MC009	ALBIN LEO	/	/	/	/	/	/	/	a	/	/
108	NCE15MC010	ALIND ROY	/	/	/	/	/	/	a	/	/	/
109	NCE15MC011	AMARJITH VINOD	/	/	/	/	a	/	/	/	/	/
110	NCE15MC012	ANTONY SEBASTIAN KACHAPALLY	/	/	/	a	/	/	/	/	/	/
111	NCE15MC013	ANUPAMA R NATH	/	/	/	a	/	/	a	/	/	/
112	NCE15MC014	ARJUN S	/	a	/	/	/	/	/	/	/	/
113	NCE15MC021	DEEPAK SUNIL	/	/	a	/	/	/	/	/	/	/
114	NCE15MC022	DEEPU VINIL	/	/	/	/	/	/	a	/	/	/
115	NCE15MC023	GOVIND K A	/	/	/	/	/	/	a	/	a	/
116	NCE15MC024	HARIHARAN C G	/	/	/	/	/	a	/	/	/	/
117	NCE15MC025	JEFINA TERESA JOHNSON	/	/	/	/	/	/	/	/	/	a
118	NCE15MC026	JEROM MATHEW PAUL	/	/	/	a	/	/	/	/	/	/
119	NCE15MC027	JITHIN T J	/	/	a	/	/	/	/	/	/	/
120	NCE15MC028	JOHNSON K JOSE	/	a	/	/	/	/	/	/	/	/
121	NCE15MC029	JOSEPH JITHIN PAUL	/	/	/	/	/	a	/	/	/	/
122	NCE15MC030	JOVIN DAVIS T	/	/	/	a	a	/	/	/	a	/
123	NCE15MC031	JUBY ELIZEBETH JOHN	/	/	/	/	/	/	/	a	/	/
124	NCE15MC032	JUSTIN JOSE	/	/	/	/	/	/	a	/	/	/
125	NCE15MC033	KENES CHRIS	/	/	a	/	/	/	/	/	/	/
126	NCE15MC034	KIRAN GEORGE	a	/	/	/	/	/	/	/	/	/
127	NCE15MC035	MARSHEL MARTIN	/	/	/	/	/	a	/	/	/	/
128	NCE15MC036	MOHAMMED HANI SHERIF	/	/	/	/	/	/	/	/	/	a
129	NCE15MC037	MOHAMED JUNAID M C	/	/	/	/	/	/	/	/	a	/
130	NCE15MC038	MOHAMED SHAROOK KHAN	/	/	a	/	/	/	/	a	/	/
131	NCE15MC040	MOHAMMED SUHAIL T S	/	a	/	/	/	/	a	/	/	/
132	NCE15MC041	MUHAMMED NAMEER P	/	/	/	/	/	a	/	/	/	/
133	NCE15MC042	NAKUL BHASKAR	/	/	/	a	/	/	/	/	/	/
134	NCE15MC046	RESHMA S	/	/	a	/	/	/	/	/	/	/
135	NCE15MC048	ROHIT JACOB ROBERT	a	/	/	/	a	/	/	/	/	/
136	NCE15MC049	SACHIN A S	/	/	a	/	/	/	/	/	/	a
137	NCE15MC050	SAGAR JOHNY C	/	/	/	/	/	/	/	/	/	a
138	NCE15MC051	SARAS MOHAN	/	/	/	/	/	/	/	a	/	/
139	NCE15MC052	SARUN R KUMAR	/	/	/	/	/	a	/	/	/	/
140	NCE15MC053	SPENCER DAVID	/	/	a	/	a	/	/	/	/	/
141	NCE15MC054	SREEJITH S	/	a	/	/	/	/	a	/	/	/



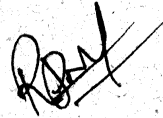
  
**PRINCIPAL**  
 Nehru College of  
 Engineering and Research Centre  
 Pannada

142	NCE15MC055	SREERAG K R	a	/	/	/	/	/	/	/	/	/
143	NCE15MC056	SUDHARSHAN K	/	/	/	/	a	/	/	/	/	/
144	NCE15MC057	SUDHEESH S	/	/	/	/	/	/	/	a	/	/
145	NCE15MC058	VISHNU P V	/	/	a	/	/	/	/	/	a	/
146	NCE15MC059	VISHNU CHANDRAN N	/	/	/	/	/	a	/	/	/	/
147	NCE15MC060	VISHNU RAJ P	/	/	/	a	/	/	/	/	/	/
148	LNCE15MC067	DHEERAJ S	/	a	/	/	/	/	/	/	/	/
149	LNCE15MC068	JAYAKRISHNAN A R	/	/	/	a	/	/	/	/	/	/
150	LNCE15MC069	JOBIN JOSEPH	/	/	/	/	/	a	/	/	/	/
151	LNCE15MC070	SREEVINAYAK P V	/	/	/	/	/	/	/	/	a	/
152	NCE16MC001	ABDUL HAMEED V M	/	/	/	/	/	/	/	a	/	/
153	NCE16MC002	ADITH SUNDER C	/	/	/	/	a	/	/	/	/	/
154	NCE16MC003	AKASH KRISHNAN A	/	/	a	/	/	/	/	/	/	/
155	NCE16MC004	AKHIL REGHUNATH	a	/	/	/	/	/	/	/	/	/
156	NCE16MC005	AMAL DAS T S	/	a	/	/	/	/	/	/	/	/
157	NCE16MC006	AMAL J ANTONY	/	/	/	/	/	/	/	a	/	/
158	NCE16MC007	AMALJITH K	/	/	/	/	a	/	/	/	/	/
159	NCE16MC008	AMAL M A	/	/	/	a	/	/	/	/	/	/
160	NCE16MC009	ANIL C A	/	/	/	/	/	/	/	/	a	/
161	NCE16MC010	ANSELM LINSON	/	/	/	/	/	/	a	/	/	/
162	NCE16MC011	ANTONY KOMBAN WINSON	/	/	/	/	/	a	/	/	/	/
163	NCE16MC013	ATHUL KRISHNA M J	a	/	/	/	/	/	/	/	/	/
164	NCE16MC014	BASIL JOY	/	/	/	/	/	a	/	/	/	/
165	NCE16MC018	GOVARDHAN P B	/	a	/	/	/	/	/	/	/	/
166	NCE16MC019	ISSAC K JOY	/	/	/	a	/	/	/	/	/	/
167	NCE16MC020	JIJAY KRISHNA M	/	/	/	/	/	/	a	/	/	/
168	NCE16MC021	JITHIN CHERIYAN	/	/	/	/	a	/	/	/	/	/
169	NCE16MC022	JITHIN T	/	/	/	/	/	/	/	/	/	a
170	NCE16MC023	JITHIN T J	/	/	a	/	/	/	/	/	/	/
171	NCE16MC026	MERRIL DANIEL ROY	/	/	/	/	/	/	/	/	a	/
172	NCE16MC027	MUHAMMED BASIL S	a	/	/	/	/	/	a	/	/	/
173	NCE16MC028	MUHAMMED SHAFI K	/	/	/	/	a	/	/	/	/	/
174	NCE16MC029	NIKHIL	a	a	/	/	/	/	/	/	/	/



  
**PRINCIPAL**  
 Nehru College of  
 Engineering and Research Centre  
 Panipady Thiruvananthapuram, Thiruvananthapuram Dt.  
 Pin - 686 507, Kerala

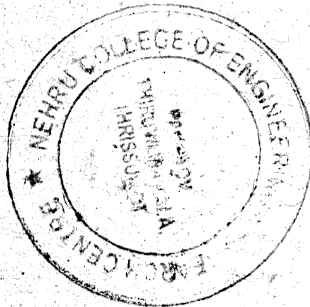
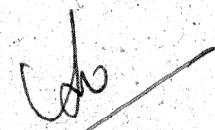
175	NCE16MC030	NOURIN	a	/	/	/	/	/	/	/	a	/
176	NCE16MC031	PRATHIBHA P K	/	/	/	a	/	/	/	/	/	/
177	NCE16MC032	RAHUL RAMESH	/	/	/	/	/	a	a	/	/	/
178	NCE16MC033	RAMEES N	/	/	/	/	/	/	a	a	/	/
179	NCE16MC034	ROBIN JOSEPH	/	a	/	/	/	/	/	/	/	a
180	NCE16MC036	ROSHAN SATHAR A	/	/	a	/	/	/	/	/	a	/
181	NCE16MC037	R VISHNU PRASATH	/	/	/	/	a	/	/	/	/	a
182	NCE16MC040	SHAROOQUE SHAJAHAN	/	/	/	/	/	/	/	/	a	/
183	NCE16MC041	SIDHARTH S	/	/	/	/	/	a	a	/	/	/
184	NCE16MC042	SIMON THOMAS	/	/	a	/	a	/	/	/	/	/
185	NCE16MC043	SMRUTHI RANJITH	/	a	/	/	/	/	/	/	/	/
186	NCE16MC044	SREEHARI K NAIR	a	/	/	a	/	/	/	/	a	/



PROGRAM COORDINATOR



HOD

PRINCIPAL

Nehru College of  
Engineering and Research Centre  
Panpady, Thiruvilwamala, Thiruvananthapuram Dt  
Pin - 680 597 Kerala



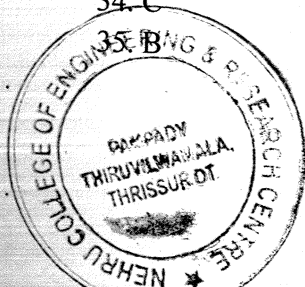
**NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE**  
(NAAC Accredited)

(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)  
**ADD ON COURSE ANSWER KEY**



**REFRIGERATION AND AIRCONDITIONING**

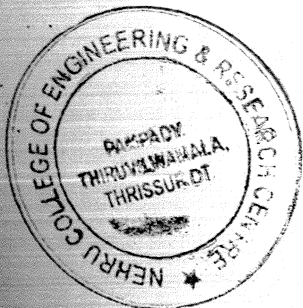
1. D
2. A
3. D
4. C
5. B
6. D
7. D
8. D
9. C
10. D
11. B
12. B
13. B
14. A
15. C
16. A
17. C
18. D
19. C
20. B
21. D
22. C
23. C
24. D
25. D
26. C
27. B
28. D
29. A
30. A
31. B
32. D
33. D
34. C



*Ch*

**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thrissur  
Pin 680 597 Kerala

- 36. A
- 37. C
- 38. A
- 39. C
- 40. A
- 41. D
- 42. B
- 43. C
- 44. B
- 45. A
- 46. D
- 47. A
- 48. B
- 49. C
- 50. C



A handwritten signature in black ink, appearing to be "Cdr", written over a horizontal line.

**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thrissur Dt  
Pin 680 597 Kerala

IRSHAD MOHAMMED GHANI  
NCANEMT028



**NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE**  
(NAAC Accredited)

(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)  
**CERTIFICATION COURSE QUESTION PAPER**



**REFRIGERATION AND AIRCONDITIONING**

1. In a refrigeration cycle, the flow of refrigerant is controlled by

- (A) Compressor
- (B) Condenser
- (C) Evaporator
- (D) Expansion valve

80  
100

2. The colour of the flame of halide torch, in case of leakage of Freon refrigerant, will change to

- (A) Bright green
- (B) Yellow
- (C) Red
- (D) Orange

3. For air conditioning the operation theater in a hospital, the percentage of outside air in the air supplied is

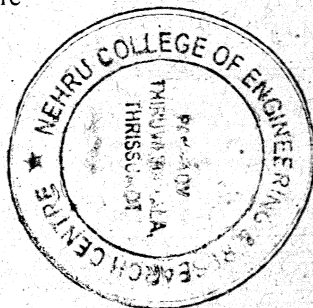
- (A) Zero
- (B) 20
- (C) 50
- (D) 100

4. In vapour compression cycle using  $\text{NH}_3$  as refrigerant, initial charge is filled at

- (A) Suction of compressor
- (B) Delivery of compressor
- (C) High pressure side close to receiver
- (D) Low pressure side near receiver

5. The temperature of air recorded by a thermometer, when it is not affected by the moisture present in the air, is called

- (A) Wet bulb temperature
- (B) Dry bulb temperature
- (C) Dew point temperature
- (D) None of these



**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Pampad, Muthiyamala, Thrissur Dt  
Pin - 686 097 Kerala

6. Absorption system normally uses the following refrigerant

(A) Freon-11

(B) Freon-22

(C) CO<sub>2</sub>

(D) Ammonia

7. Which of the following statement is correct?

(A) In vapour absorption refrigerator, the compression of refrigerant is avoided.

(B) Sub-cooling can be achieved by circulating more quantity of cooling water through the condenser.

(C) In vapour compression refrigeration, the vapour is drawn in the compressor cylinder during its suction stroke and is compressed adiabatically during the compression stroke.

(D) All of the above

8. Allowable pressure on high pressure side or ammonia absorption system is of the order of

(A) Atmospheric pressure

(B) Slightly above atmospheric pressure

(C) 24 bars

(D) 56 bars

9. The C.O.P. of a Carnot refrigerator in winter will be \_\_\_\_\_ as compared to C.O.P. in summer.

(A) Same

(B) Lower

(C) Higher

(D) None of these

10. Chaperon equation is a relation between

(A) Temperature, pressure and enthalpy

(B) Specific volume and enthalpy

(C) Temperature and enthalpy

(D) Temperature, pressure, specific volume and enthalpy

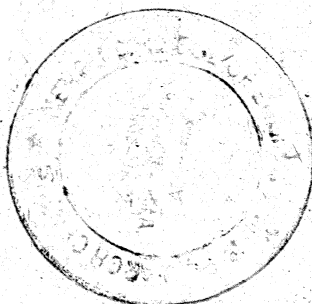
11. During humidification process, \_\_\_\_\_ increases.

(A) Wet bulb temperature

(B) Relative humidity

(C) Dry bulb temperature

(D) Specific humidity



PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady, Thrissur District, Thrissur Dt  
Pin - 680 597 Kerala

12. Where does the lowest temperature occur in a vapour compression cycle?

- (A) Condenser
- (B) Evaporator
- (C) Compressor
- (D) Expansion valve

13. The ratio of actual mass of water vapour in a given volume of moist air to the mass of water vapour in the same volume of saturated air at the same temperature and pressure, is called

- (A) Humidity ratio
- (B) Relative humidity
- (C) Absolute humidity
- (D) Degree of saturation

14. Under cooling in a refrigeration cycle

- (A) Increases C.O.P
- (B) Decreases C.O.P
- (C) C.O.P remains unaltered
- (D) Other factors decide C.O.P

15. In a domestic vapour compression refrigerator, the refrigerant commonly used is

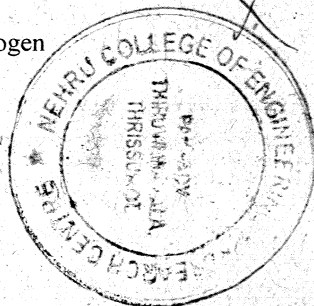
- (A)  $CO_2$
- (B) Ammonia
- (C) R-12
- (D) All of these

16. The COP of a vapour compression plant in comparison to vapour absorption plant is

- (A) More
- (B) Less
- (C) Same
- (D) More/less depending on size of plant

17. The fluids used in Electrolux refrigerator are

- (A) Water and hydrogen
- (B) Ammonia and hydrogen
- (C) Ammonia, water and hydrogen
- (D) None of these



PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvananthapuram, Kerala  
Pin - 580 067 Kerala

18. Domestic refrigerator working on vapour compression cycle uses the following type of expansion device

- (A) Electrically operated throttling valve
- (B) Manually operated valve
- (C) Thermostatic valve
- (D) Capillary tube

19. The condition of refrigerant after passing through the expansion or throttle valve, in a vapour compression system is

- (A) High pressure saturated liquid
- (B) Wet vapour
- (C) Very wet vapour
- (D) Dry vapour

20. An important characteristic of absorption system of refrigeration is

- (A) Noisy operation
- (B) Quiet operation
- (C) Cooling below  $0^{\circ}\text{C}$
- (D) Very little power consumption

21. The centrifugal compressors are generally used for refrigerants that require

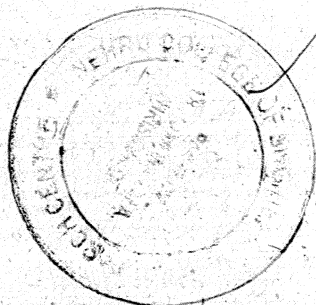
- (A) Small displacements and low condensing pressures
- (B) Large displacements and high condensing pressures
- (C) Small displacements and high condensing pressures
- (D) Large displacements and low condensing pressures

22. Pick up the incorrect statement

- (A) Lithium bromide used in vapour absorption cycle is non volatile
- (B) Lithium bromide plant can't operate below  $0^{\circ}\text{C}$
- (C) A separator is used in lithium bromide plant to remove the unwanted water vapour by condensing
- (D) Concentration of solution coming out of lithium bromide generator is more in comparison to that entering the generator

23. During dehumidification process, the relative humidity

- (A) Remains constant
- (B) Increases
- (C) Decreases
- (D) None of these



**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Panapady, Thiruvilwamala, Thiruvananthapuram  
Pin - 680 597 Kerala

24. The refrigerant widely used in domestic refrigerators is

- (A) Ammonia
- (B) Carbon dioxide
- (C) Sulphur dioxide
- (D) R-12

25. The moisture in a refrigerant is removed by

- (A) Evaporator
- (B) Safety relief valve
- (C) Dehumidifier
- (D) Driers

26. During sensible cooling of air \_\_\_\_\_ decreases.

- (A) Wet bulb temperature
- (B) Relative humidity
- (C) Dry bulb temperature
- (D) Specific humidity

27. At lower temperatures and pressures, the latent heat of vaporisation of a refrigerant

- (A) Decreases
- (B) Increases
- (C) Remain same
- (D) Depends on other factors

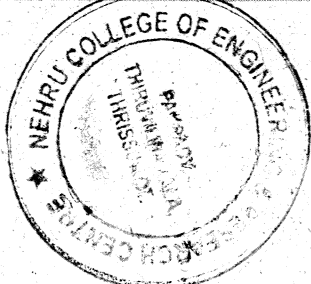
28. The wet-bulb depression is zero when relative humidity is

- (A) Zero
- (B) 0.5
- (C) 0.75
- (D) 1.0

29. The C.O.P of a refrigeration cycle with increase in evaporator temperature, keeping condenser temperature constant, will

- (A) Increase
- (B) Decrease
- (C) Remain unaffected
- (D) May increase or decrease depending on the type of refrigerant used

30. During humidification process, dry bulb temperature



PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvananthapuram, Thiruvananthapuram Dt  
Pin - 680 597 Kerala

(A) Remains constant

(B) Increases

(C) Decreases

(D) None of these

31. The vapour pressure of refrigerant should be

(A) Lower than atmospheric pressure

(B) Higher than atmospheric pressure

(C) Equal to atmospheric pressure

(D) Could be anything

32. Which of the following statement is wrong?

(A) The performance of the vapour compression refrigerator varies considerably with both vaporising and condensing temperatures.

(B) In vapour compression cycle, the useful part of the heat transfer is at the condenser.

(C) In ammonia-hydrogen (Electrolux) refrigerator, no compressor, pump or fan is required.

(D) The effect of under-cooling the liquid refrigerant is to decrease the coefficient of performance

33. In a vapour compression system, the condition of refrigerant before passing through the condenser is

(A) Saturated liquid

(B) Wet vapour

(C) Dry saturated vapour

(D) Superheated vapour

34. For proper refrigeration in a cabinet, if the temperature and vapour pressure difference between cabinet and atmosphere is high, then

(A) Bigger cabinet should be used

(B) Smaller cabinet should be used

(C) Perfectly tight vapour seal should be used

(D) Refrigerant with lower evaporation temperature should be used

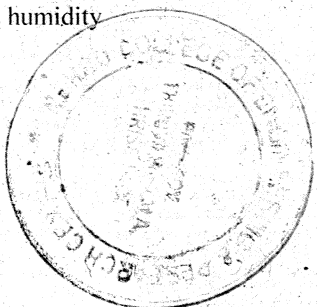
35. During sensible heating of air \_\_\_\_\_ decreases.

(A) Wet bulb temperature

(B) Relative humidity

(C) Dry bulb temperature

(D) Specific humidity



**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Panipady Thiruvilwamala, Trissur, Dt  
Pin: 686 597 Kerala

36. One ton refrigeration corresponds to

- (A) 50 kcal/ min
- (B) 50 kcal/ hr
- (C) 80 kcal/ min
- (D) 80 kcal/ hr

37. The process, generally used in winter air-conditioning to warm and humidity the air, is called

- (A) Humidification
- (B) Dehumidification
- (C) Heating and humidification
- (D) Cooling and dehumidification

38. The leaks in a refrigeration system using Freon are detected by

- (A) Halide torch which on detection produces greenish flame lighting
- (B) Sulphur sticks which on detection gives white smoke
- (C) Using reagents
- (D) Smelling

39. The reduced ambient air cooling system has

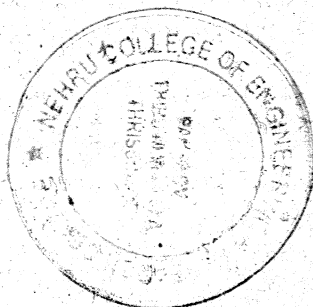
- (A) One cooling turbine and one heat exchanger
- (B) One cooling turbine and two heat exchangers
- (C) Two cooling turbines and one heat exchanger
- (D) Two cooling turbines and two heat exchangers

40. In vapour compression cycle, the condition of refrigerant is saturated liquid

- (A) After passing through the condenser
- (B) Before passing through the condenser
- (C) After passing through the expansion throttle valve
- (D) Before entering the expansion valve

41. Which of the following refrigerant has the maximum ozone depletion potential in the stratosphere?

- (A) Ammonia
- (B) Carbon dioxide
- (C) Sulphur dioxide
- (D) Fluorine



*[Signature]*  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady, Pampady, Thrissur District  
Pin - 680 597 Kerala

42. If the evaporator temperature of a plant is lowered, keeping the condenser temperature constant, the h.p. of compressor required will be

(A) Same

(B) More

(C) Less

(D) More/less depending on rating

43. Hydrogen is used in Electrolux refrigeration system so as to \_\_\_\_\_ the rate of evaporation of the liquid ammonia passing through the evaporator.

(A) Equalize

(B) Reduce

(C) Increase

(D) None of these

44. Pick up the wrong statement. A refrigerant should have

(A) Low specific heat of liquid

(B) High boiling point

(C) High latent heat of vaporisation

(D) Higher critical temperature

45. The pressure at the inlet of a refrigerant compressor is called

(A) Suction pressure

(B) Discharge pressure

(C) Critical pressure

(D) Back pressure

46. Condensing temperature in a refrigerator is the temperature

(A) Of cooling medium

(B) Of freezing zone

(C) Of evaporator

(D) At which refrigerant gas becomes liquid

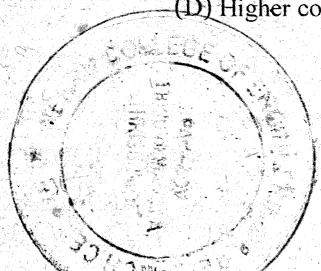
47. In aircraft, air refrigeration cycle is used because of

(A) Low weight per tonne of refrigeration

(B) High heat transfer rate

(C) Low temperature at high altitudes

(D) Higher coefficient of performance



**PRINCIPAL**  
New College of  
Engineering and Research Centre  
Pattambi, Thiruvananthapuram Dt  
(Pin) 690 597 Kerala

48. Highest pressure encountered in a refrigeration system should be

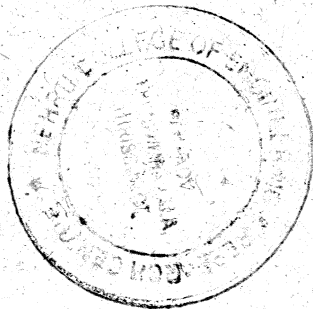
- (A) Critical pressure of refrigerant
- (B) Much below critical pressure
- (C) Much above critical pressure
- (D) Near critical pressure

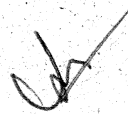
49. The refrigerant used for absorption refrigerators working on heat from solar collectors is a mixture of water and

- (A) Carbon dioxide
- (B) Sulphur dioxide
- (C) Lithium bromide
- (D) R-12

50. One ton of the refrigeration is

- (A) The standard unit used in refrigeration problems
- (B) The cooling effect produced by melting 1 ton of ice
- (C) The refrigeration effect to freeze 1 ton of water at  $0^{\circ}\text{C}$  into ice at  $0^{\circ}\text{C}$  in 24 hours
- (D) The refrigeration effect to produce 1 ton of ice at NTP conditions



  
PRINCIPAL  
National Institute of  
Engineering, Technology and Research Centre  
Pampal, Thrissur, Kerala  
Pin 686039

Adithya Nohan

NCE15MC004



**NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE**  
(NAAC Accredited)

(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)  
CERTIFICATION COURSE QUESTION PAPER



**REFRIGERATION AND AIRCONDITIONING**

58  
100  
X

1. In a refrigeration cycle, the flow of refrigerant is controlled by

- (A) Compressor
- (B) Condenser
- (C) Evaporator
- (D) Expansion valve

2. The colour of the flame of halide torch, in case of leakage of Freon refrigerant, will change to

- (A) Bright green
- (B) Yellow
- (C) Red
- (D) Orange

3. For air conditioning the operation theater in a hospital, the percentage of outside air in the air supplied is

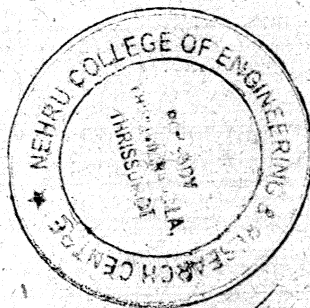
- (A) Zero
- (B) 20
- (C) 50
- (D) 100

4. In vapour compression cycle using  $NH_3$  as refrigerant, initial charge is filled at

- (A) Suction of compressor
- (B) Delivery of compressor
- (C) High pressure side close to receiver
- (D) Low pressure side near receiver

5. The temperature of air recorded by a thermometer, when it is not affected by the moisture present in the air, is called

- (A) Wet bulb temperature
- (B) Dry bulb temperature
- (C) Dew point temperature
- (D) None of these



PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvishamala, Thirissur Dt  
Pin - 680 597 Kerala

6. Absorption system normally uses the following refrigerant

- (A) Freon-11
- (B) Freon-22
- (C) CO<sub>2</sub>
- (D) Ammonia

7. Which of the following statement is correct?

- (A) In vapour absorption refrigerator, the compression of refrigerant is avoided.
- (B) Sub-cooling can be achieved by circulating more quantity of cooling water through the condenser.
- (C) In vapour compression refrigeration, the vapour is drawn in the compressor cylinder during its suction stroke and is compressed adiabatically during the compression stroke.

(D) All of the above

8. Allowable pressure on high pressure side or ammonia absorption system is of the order of

- (A) Atmospheric pressure
- (B) Slightly above atmospheric pressure
- (C) 24 bars

(D) 56 bars

9. The C.O.P. of a Carnot refrigerator in winter will be \_\_\_\_\_ as compared to C.O.P. in summer.

- (A) Same
- (B) Lower
- (C) Higher
- (D) None of these

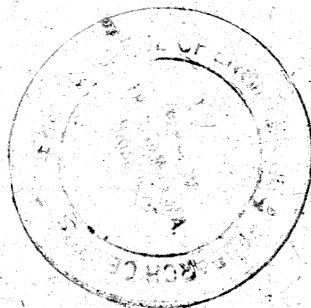
10. Chaperon equation is a relation between

- (A) Temperature, pressure and enthalpy
- (B) Specific volume and enthalpy
- (C) Temperature and enthalpy

(D) Temperature, pressure, specific volume and enthalpy

11. During humidification process, \_\_\_\_\_ increases.

- (A) Wet bulb temperature
- (B) Relative humidity
- (C) Dry bulb temperature
- (D) Specific humidity



PRINCIPAL  
Naraya College of  
Engineering and Research Centre  
Pampady, Punalamala, Thrissur Dt.  
Pin - 680 597, Kerala

12. Where does the lowest temperature occur in a vapour compression cycle?

- (A) Condenser
- (B) Evaporator
- (C) Compressor
- (D) Expansion valve

13. The ratio of actual mass of water vapour in a given volume of moist air to the mass of water vapour in the same volume of saturated air at the same temperature and pressure, is called

- (A) Humidity ratio
- (B) Relative humidity
- (C) Absolute humidity
- (D) Degree of saturation

14. Under cooling in a refrigeration cycle

- (A) Increases C.O.P
- (B) Decreases C.O.P
- (C) C.O.P remains unaltered
- (D) Other factors decide C.O.P

15. In a domestic vapour compression refrigerator, the refrigerant commonly used is

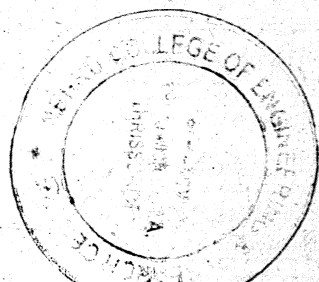
- (A)  $CO_2$
- (B) Ammonia
- (C) R-12
- (D) All of these

16. The COP of a vapour compression plant in comparison to vapour absorption plant is

- (A) More
- (B) Less
- (C) Same
- (D) More/less depending on size of plant

17. The fluids used in Electrolux refrigerator are

- (A) Water and hydrogen
- (B) Ammonia and hydrogen
- (C) Ammonia, water and hydrogen
- (D) None of these



PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvananthapuram, Thiruvananthapuram Dt  
Pin 686 597 Kerala

18. Domestic refrigerator working on vapour compression cycle uses the following type of expansion device

- (A) Electrically operated throttling valve
- (B) Manually operated valve
- (C) Thermostatic valve
- (D) Capillary tube

19. The condition of refrigerant after passing through the expansion or throttle valve, in a vapour compression system is

- (A) High pressure saturated liquid
- (B) Wet vapour
- (C) Very wet vapour
- (D) Dry vapour

20. An important characteristic of absorption system of refrigeration is

- (A) Noisy operation
- (B) Quiet operation
- (C) Cooling below 0°C
- (D) Very little power consumption

21. The centrifugal compressors are generally used for refrigerants that require

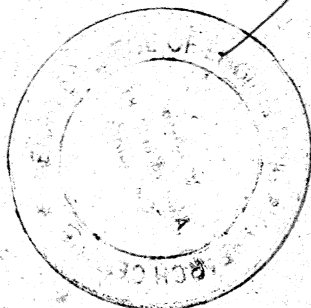
- (A) Small displacements and low condensing pressures
- (B) Large displacements and high condensing pressures
- (C) Small displacements and high condensing pressures
- (D) Large displacements and low condensing pressures

22. Pick up the incorrect statement

- (A) Lithium bromide used in vapour absorption cycle is non volatile
- (B) Lithium bromide plant can't operate below 0°C
- (C) A separator is used in lithium bromide plant to remove the unwanted water vapour by condensing
- (D) Concentration of solution coming out of lithium bromide generator is more in comparison to that entering the generator

23. During dehumidification process, the relative humidity

- (A) Remains constant
- (B) Increases
- (C) Decreases
- (D) None of these



PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Tampatty, Thiruvivargala, Thrissur Dt  
Pin - 680 597 Kerala

24. The refrigerant widely used in domestic refrigerators is

- (A) Ammonia
- (B) Carbon dioxide
- (C) Sulphur dioxide
- (D) R-12

X

25. The moisture in a refrigerant is removed by

- (A) Evaporator
- (B) Safety relief valve
- (C) Dehumidifier
- (D) Driers

✓

26. During sensible cooling of air \_\_\_\_\_ decreases.

- (A) Wet bulb temperature
- (B) Relative humidity
- (C) Dry bulb temperature
- (D) Specific humidity

X

27. At lower temperatures and pressures, the latent heat of vaporisation of a refrigerant

- (A) Decreases
- (B) Increases
- (C) Remain same
- (D) Depends on other factors

✓

28. The wet bulb depression is zero when relative humidity is

- (A) Zero
- (B) 0.5
- (C) 0.75
- (D) 1.0

X

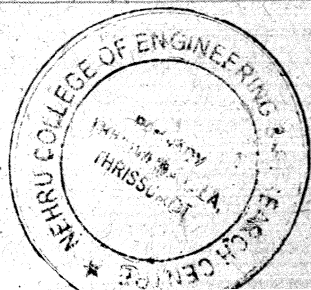
29. The C.O.P of a refrigeration cycle with increase in evaporator temperature, keeping condenser temperature constant, will

- (A) Increase
- (B) Decrease
- (C) Remain unaffected
- (D) May increase or decrease depending on the type of refrigerant used

✓

30. During humidification process, dry bulb temperature

✓



PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Panappan  
Kannamala, Thrissur Dt  
Pin 686 597, Kerala

(A) Remains constant

(B) Increases

(C) Decreases

(D) None of these

31. The vapour pressure of refrigerant should be

(A) Lower than atmospheric pressure

(B) Higher than atmospheric pressure

(C) Equal to atmospheric pressure

(D) Could be anything

32. Which of the following statement is wrong?

(A) The performance of the vapour compression refrigerator varies considerably with both vaporising and condensing temperatures.

(B) In vapour compression cycle, the useful part of the heat transfer is at the condenser.

(C) In ammonia-hydrogen (Electrolux) refrigerator, no compressor, pump or fan is required.

(D) The effect of under-cooling the liquid refrigerant is to decrease the coefficient of performance.

33. In a vapour compression system, the condition of refrigerant before passing through the condenser is

(A) Saturated liquid

(B) Wet vapour

(C) Dry saturated vapour

(D) Superheated vapour

34. For proper refrigeration in a cabinet, if the temperature and vapour pressure difference between cabinet and atmosphere is high, then

(A) Bigger cabinet should be used

(B) Smaller cabinet should be used

(C) Perfectly tight vapour seal should be used

(D) Refrigerant with lower evaporation temperature should be used

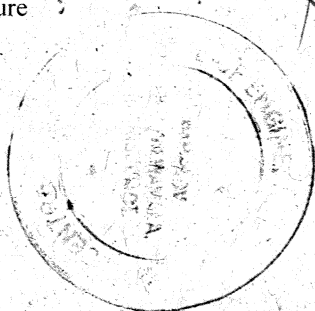
35. During sensible heating of air \_\_\_\_\_ decreases.

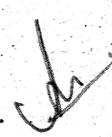
(A) Wet bulb temperature

(B) Relative humidity

(C) Dry bulb temperature

(D) Specific humidity



  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thiruvananthapuram Dt  
Pin - 680 597 Kerala

36. One ton refrigeration corresponds to

- (A) 50 kcal/ min
- (B) 50 kcal/ hr
- (C) 80 kcal/ min
- (D) 80 kcal/ hr

37. The process, generally used in winter air-conditioning to warm and humidity the air, is called

- (A) Humidification
- (B) Dehumidification
- (C) Heating and humidification
- (D) Cooling and dehumidification

38. The leaks in a refrigeration system using Freon are detected by

- (A) Halide torch which on detection produces greenish flame lighting
- (B) Sulphur sticks which on detection gives white smoke
- (C) Using reagents
- (D) Smelling

39. The reduced ambient air cooling system has

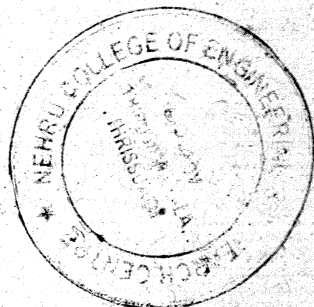
- (A) One cooling turbine and one heat exchanger
- (B) One cooling turbine and two heat exchangers
- (C) Two cooling turbines and one heat exchanger
- (D) Two cooling turbines and two heat exchangers

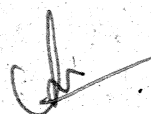
40. In vapour compression cycle, the condition of refrigerant is saturated liquid

- (A) After passing through the condenser
- (B) Before passing through the condenser
- (C) After passing through the expansion throttle valve
- (D) Before entering the expansion valve

41. Which of the following refrigerant has the maximum ozone depletion potential in the stratosphere?

- (A) Ammonia
- (B) Carbon dioxide
- (C) Sulphur dioxide
- (D) Fluorine



  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Panipady Thiruvananthapuram Dt  
Pin - 696 38, Kerala.

42. If the evaporator temperature of a plant is lowered, keeping the condenser temperature constant, the power of compressor required will be

- (A) Same
- (B) More
- (C) Less
- (D) More/less depending on rating

43. Hydrogen is used in Electrolux refrigeration system so as to \_\_\_\_\_ the rate of evaporation of the liquid ammonia passing through the evaporator.

- (A) Equalize
- (B) Reduce
- (C) Increase
- (D) None of these

44. Pick up the wrong statement. A refrigerant should have

- (A) Low specific heat of liquid
- (B) High boiling point
- (C) High latent heat of vaporisation
- (D) Higher critical temperature

45. The pressure at the inlet of a refrigerant compressor is called

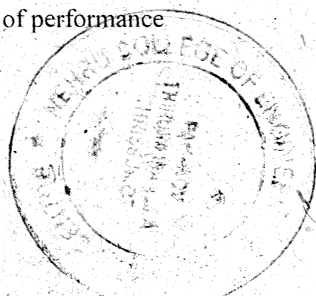
- (A) Suction pressure
- (B) Discharge pressure
- (C) Critical pressure
- (D) Back pressure

46. Condensing temperature in a refrigerator is the temperature

- (A) Of cooling medium
- (B) Of freezing zone
- (C) Of evaporator
- (D) At which refrigerant gas becomes liquid

47. In aircraft, air refrigeration cycle is used because of

- (A) Low weight per tonne of refrigeration
- (B) High heat transfer rate
- (C) Low temperature at high altitudes
- (D) Higher coefficient of performance



PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thrissur DT,  
Pin - 680 50, Kerala

48. Highest pressure encountered in a refrigeration system should be

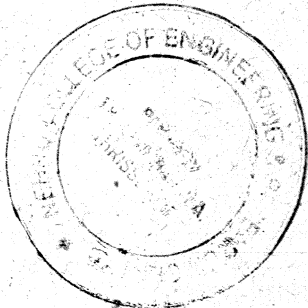
- (A) Critical pressure of refrigerant
- (B) Much below critical pressure
- (C) Much above critical pressure
- (D) Near critical pressure

49. The refrigerant used for absorption refrigerators working on heat from solar collectors is a mixture of water and

- (A) Carbon dioxide
- (B) Sulphur dioxide
- (C) Lithium bromide
- (D) R-12

50. One ton of the refrigeration is

- (A) The standard unit used in refrigeration problems
- (B) The cooling effect produced by melting 1 ton of ice
- (C) The refrigeration effect to freeze 1 ton of water at  $0^{\circ}\text{C}$  into ice at  $0^{\circ}\text{C}$  in 24 hours
- (D) The refrigeration effect to produce 1 ton of ice at NTP conditions



  
**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Panapady, Inniyiyamala, Thiruvananthapuram Dt  
Pin - 680 597 Kerala

Arjun Vijay  
NCANEMT016



**NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)**

(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)  
**CERTIFICATION COURSE QUESTION PAPER**



**REFRIGERATION AND AIRCONDITIONING**

1. In a refrigeration cycle, the flow of refrigerant is controlled by

- (A) Compressor
- (B) Condenser
- (C) Evaporator
- (D) Expansion valve

X  $\frac{18}{100}$

2. The colour of the flame of halide torch, in case of leakage of Freon refrigerant, will change to

- (A) Bright green
- (B) Yellow
- (C) Red
- (D) Orange

X

3. For air conditioning the operation theater in a hospital, the percentage of outside air in the air supplied is

- (A) Zero
- (B) 20
- (C) 50
- (D) 100

X

4. In vapour compression cycle using  $NH_3$  as refrigerant, initial charge is filled at

- (A) Suction of compressor
- (B) Delivery of compressor
- (C) High pressure side close to receiver
- (D) Low pressure side near receiver

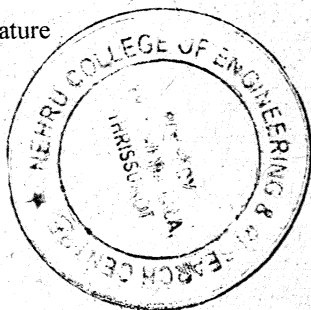
✓

5. The temperature of air recorded by a thermometer, when it is not affected by the moisture present in the air, is called

- (A) Wet bulb temperature
- (B) Dry bulb temperature
- (C) Dew point temperature
- (D) None of these

X

✓



**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Panpady Thiruvilwamala, Thiruvananthapuram  
Pin 680 597 Kerala

6. Absorption system normally uses the following refrigerant

- (A) Freon-11
- (B) Freon-22
- (C) CO<sub>2</sub>
- (D) Ammonia

7. Which of the following statement is correct?

- (A) In vapour absorption refrigerator, the compression of refrigerant is avoided.
- (B) Sub-cooling can be achieved by circulating more quantity of cooling water through the condenser.
- (C) In vapour compression refrigeration, the vapour is drawn in the compressor cylinder during its suction stroke and is compressed adiabatically during the compression stroke.
- (D) All of the above

8. Allowable pressure on high pressure side or ammonia absorption system is of the order of

- (A) Atmospheric pressure
- (B) Slightly above atmospheric pressure
- (C) 24 bars
- (D) 56 bars

9. The C.O.P. of a Carnot refrigerator in winter will be \_\_\_\_\_ as compared to C.O.P. in summer.

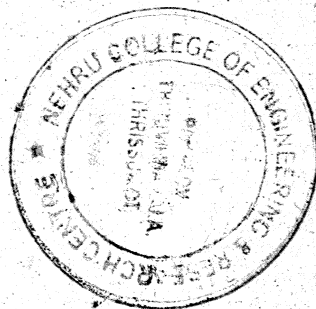
- (A) Same
- (B) Lower
- (C) Higher
- (D) None of these

10. Chaperon equation is a relation between

- (A) Temperature, pressure and enthalpy
- (B) Specific volume and enthalpy
- (C) Temperature and enthalpy
- (D) Temperature, pressure, specific volume and enthalpy

11. During humidification process, \_\_\_\_\_ increases.

- (A) Wet bulb temperature
- (B) Relative humidity
- (C) Dry bulb temperature
- (D) Specific humidity



PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Campady, Chiruvannala, Thiruvananthapuram Dt.  
Pin - 686 597, Kerala

12. Where does the lowest temperature occur in a vapour compression cycle?

(A) Condenser

(B) Evaporator

(C) Compressor

(D) Expansion valve

13. The ratio of actual mass of water vapour in a given volume of moist air to the mass of water vapour in the same volume of saturated air at the same temperature and pressure, is called

(A) Humidity ratio

(B) Relative humidity

(C) Absolute humidity

(D) Degree of saturation

14. Under cooling in a refrigeration cycle

(A) Increases C.O.P

(B) Decreases C.O.P

(C) C.O.P remains unaltered

(D) Other factors decide C.O.P

15. In a domestic vapour compression refrigerator, the refrigerant commonly used is

(A)  $CO_2$

(B) Ammonia

(C) R-12

(D) All of these

16. The COP of a vapour compression plant in comparison to vapour absorption plant is

(A) More

(B) Less

(C) Same

(D) More/less depending on size of plant

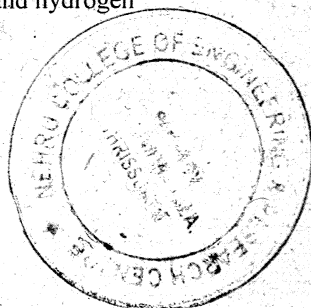
17. The fluids used in Electrolux refrigerator are

(A) Water and hydrogen

(B) Ammonia and hydrogen

(C) Ammonia, water and hydrogen

(D) None of these



PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Panampady, Thiruvananthapuram, Thiruvananthapuram Dt  
Pin 680 597 Kerala

18. Domestic refrigerator working on vapour compression cycle uses the following type of expansion device

- (A) Electrically operated throttling valve
- (B) Manually operated valve
- (C) Thermostatic valve
- (D) Capillary tube

19. The condition of refrigerant after passing through the expansion or throttle valve, in a vapour compression system is

- (A) High pressure saturated liquid
- (B) Wet vapour
- (C) Very wet vapour
- (D) Dry vapour

20. An important characteristic of absorption system of refrigeration is

- (A) Noisy operation
- (B) Quiet operation
- (C) Cooling below  $0^{\circ}\text{C}$
- (D) Very little power consumption

21. The centrifugal compressors are generally used for refrigerants that require

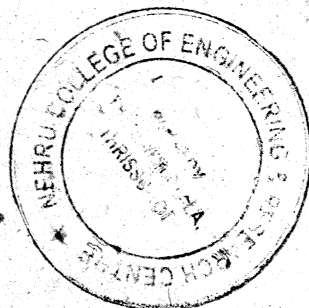
- (A) Small displacements and low condensing pressures
- (B) Large displacements and high condensing pressures
- (C) Small displacements and high condensing pressures
- (D) Large displacements and low condensing pressures

22. Pick up the incorrect statement

- (A) Lithium bromide used in vapour absorption cycle is non volatile
- (B) Lithium bromide plant can't operate below  $0^{\circ}\text{C}$
- (C) A separator is used in lithium bromide plant to remove the unwanted water vapour by condensing
- (D) Concentration of solution coming out of lithium bromide generator is more in comparison to that entering the generator

23. During dehumidification process, the relative humidity

- (A) Remains constant
- (B) Increases
- (C) Decreases
- (D) None of these



PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Thiruvananthapuram  
Date: \_\_\_\_\_

24. The refrigerant widely used in domestic refrigerators is

(A) Ammonia

(B) Carbon dioxide

(C) Sulphur dioxide

(D) R-12

25. The moisture in a refrigerant is removed by

(A) Evaporator

(B) Safety relief valve

(C) Dehumidifier

(D) Driers

26. During sensible cooling of air \_\_\_\_\_ decreases.

(A) Wet bulb temperature

(B) Relative humidity

(C) Dry bulb temperature

(D) Specific humidity

27. At lower temperatures and pressures, the latent heat of vaporisation of a refrigerant

(A) Decreases

(B) Increases

(C) Remain same

(D) Depends on other factors

28. The wet bulb depression is zero when relative humidity is

(A) Zero

(B) 0.5

(C) 0.75

(D) 1.0

29. The C.O.P of a refrigeration cycle with increase in evaporator temperature, keeping condenser temperature constant, will

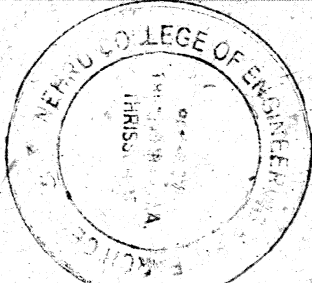
(A) Increase

(B) Decrease

(C) Remain unaffected

(D) May increase or decrease depending on the type of refrigerant used

30. During humidification process, dry bulb temperature



**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Rampady Thiruvilwamala, Thiruvananthapuram Dt  
Pin 680 597 Kerala

(A) Remains constant

(B) Increases

(C) Decreases

(D) None of these

31. The vapour pressure of refrigerant should be

(A) Lower than atmospheric pressure

(B) Higher than atmospheric pressure

(C) Equal to atmospheric pressure

(D) Could be anything

32. Which of the following statement is wrong?

(A) The performance of the vapour compression refrigerator varies considerably with both vaporising and condensing temperatures.

(B) In vapour compression cycle, the useful part of the heat transfer is at the condenser.

(C) In ammonia-hydrogen (Electrolux) refrigerator, no compressor, pump or fan is required.

(D) The effect of under-cooling the liquid refrigerant is to decrease the coefficient of performance.

33. In a vapour compression system, the condition of refrigerant before passing through the condenser is

(A) Saturated liquid

(B) Wet vapour

(C) Dry saturated vapour

(D) Superheated vapour

34. For proper refrigeration in a cabinet, if the temperature and vapour pressure difference between cabinet and atmosphere is high, then

(A) Bigger cabinet should be used

(B) Smaller cabinet should be used

(C) Perfectly tight vapour seal should be used

(D) Refrigerant with lower evaporation temperature should be used

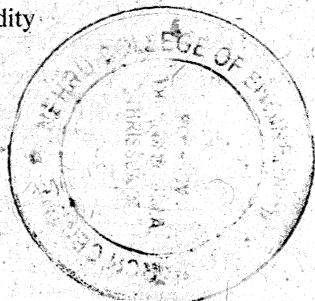
35. During sensible heating of air \_\_\_\_\_ decreases.

(A) Wet bulb temperature

(B) Relative humidity

(C) Dry bulb temperature

(D) Specific humidity



PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvananthapuram, Kerala  
Pin - 686 597 Kerala

36. One ton refrigeration corresponds to

- (A) 50 kcal/ min
- (B) 50 kcal/ hr
- (C) 80 kcal/ min
- (D) 80 kcal/ hr

37. The process, generally used in winter air-conditioning to warm and humidity the air, is called

- (A) Humidification
- (B) Dehumidification
- (C) Heating and humidification
- (D) Cooling and dehumidification

38. The leaks in a refrigeration system using Freon are detected by

- (A) Halide torch which on detection produces greenish flame lighting
- (B) Sulphur sticks which on detection gives white smoke
- (C) Using reagents
- (D) Smelling

39. The reduced ambient air cooling system has

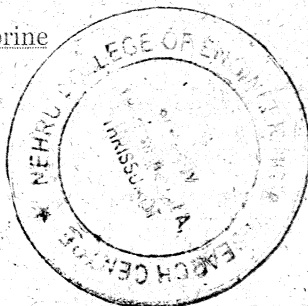
- (A) One cooling turbine and one heat exchanger
- (B) One cooling turbine and two heat exchangers
- (C) Two cooling turbines and one heat exchanger
- (D) Two cooling turbines and two heat exchangers


40. In vapour compression cycle, the condition of refrigerant is saturated liquid

- (A) After passing through the condenser
- (B) Before passing through the condenser
- (C) After passing through the expansion throttle valve
- (D) Before entering the expansion valve

41. Which of the following refrigerant has the maximum ozone depletion potential in the stratosphere

- (A) Ammonia
- (B) Carbon dioxide
- (C) Sulphur dioxide
- (D) Fluorine



  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Panpady Thiruvithamala Thiruvananthapuram Dt  
Pin 680 597 Kerala

42. If the evaporator temperature of a plant is lowered, keeping the condenser temperature constant, the h.p. of compressor required will be

- (A) Same
- (B) More
- (C) Less
- (D) More/less depending on rating

43. Hydrogen is used in Electrolux refrigeration system so as to \_\_\_\_\_ the rate of evaporation of the liquid ammonia passing through the evaporator.

- (A) Equalize
- (B) Reduce
- (C) Increase
- (D) None of these

44. Pick up the wrong statement. A refrigerant should have

- (A) Low specific heat of liquid
- (B) High boiling point
- (C) High latent heat of vaporisation
- (D) Higher critical temperature

45. The pressure at the inlet of a refrigerant compressor is called

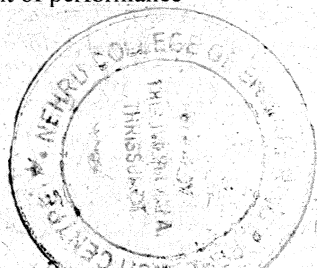
- (A) Suction pressure
- (B) Discharge pressure
- (C) Critical pressure
- (D) Back pressure


46. Condensing temperature in a refrigerator is the temperature

- (A) Of cooling medium
- (B) Of freezing zone
- (C) Of evaporator
- (D) At which refrigerant gas becomes liquid

47. In aircraft, air refrigeration Cycle is used because of

- (A) Low weight per tonne of refrigeration
- (B) High heat transfer rate
- (C) Low temperature at high altitudes
- (D) Higher coefficient of performance



  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Panipady Thiruvithamala, Thiruvananthapuram  
Pin. 680 597, Kerala

48. Highest pressure encountered in a refrigeration system should be

- (A) Critical pressure of refrigerant
- (B) Much below critical pressure
- (C) Much above critical pressure
- (D) Near critical pressure

X

49. The refrigerant used for absorption refrigerators working on heat from solar collectors is a mixture of water and

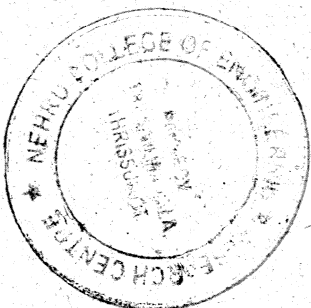
- (A) Carbon dioxide
- (B) Sulphur dioxide
- (C) Lithium bromide
- (D) R-12

X

50. One ton of the refrigeration is

- (A) The standard unit used in refrigeration problems
- (B) The cooling effect produced by melting 1 ton of ice
- (C) The refrigeration effect to freeze 1 ton of water at  $0^{\circ}\text{C}$  into ice at  $0^{\circ}\text{C}$  in 24 hours
- (D) The refrigeration effect to produce 1 ton of ice at NTP conditions

X



*[Handwritten signature]*

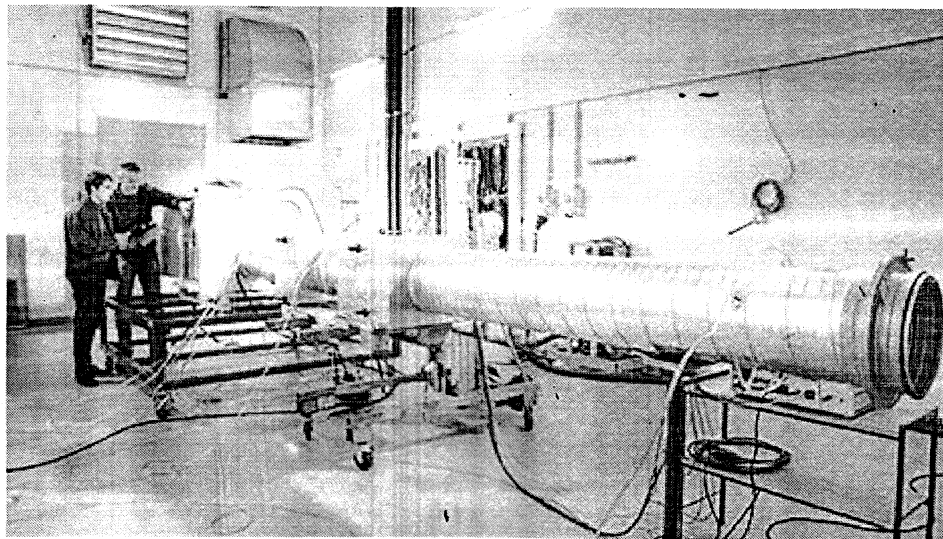
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvitthamala, Thrissur Dt  
Pin - 680 597 Kerala



**NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE**  
(NAAC Accredited)  
(Approved by AICTE, Affiliated to APJAKTU & Calicut University, Kerala)  
ACADAMIC YEAR (2016-17)



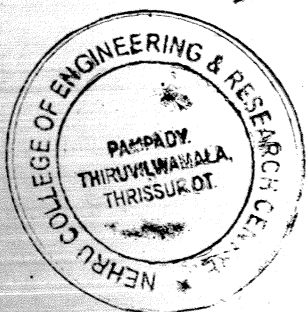
**DEPARTMENT OF MECHATRONICS ENGINEERING**  
**OFFERING CERTIFIED COURSE ON**  
**REFRIGERATION AND AIRCONDITIONING**



**COURSE POINTS**

- ✓ REFRIGERATION
- ✓ VAPOUR COMPRESSION REFRIGERATION SYSTEM
- ✓ EQUIPMENTS FOR REFRIGERATION
- ✓ AIR CONDITIONING PROCESS

**FACULTY**

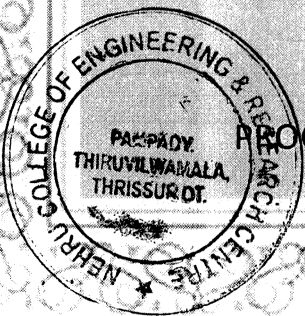


**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thrissur Dist  
Pin 680 597 Kerala



# CERTIFICATE OF COMPLETION

.....ASHWIN KJ (NCANEMTOIT).....had successfully completed  
the Certified course “REFRIGERATION AND AIR CONDITIONING” during 2016-17  
conducted by the Department of Mechatronics Engineering, Nehru College of  
Engineering and Research Centre, Pampady, Thrissur.



PROGRAM CO-ORDINATOR

HEAD OF DEPARTMENT

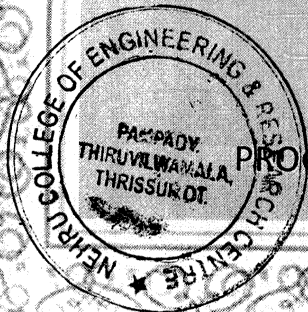
PRINCIPAL  
Nehru College of

Engineering and Research Centre  
Pampady, Thiruvilwamala, Thrissur Dt.  
Pin 680 59 Kerala



# CERTIFICATE OF COMPLETION

.....JITHU J (NCA NEMT 031).....had successfully completed  
the Certified course "REFRIGERATION AND AIR CONDITIONING" during 2016-17  
conducted by the Department of Mechatronics Engineering, Nehru College of  
Engineering and Research Centre, Pampady, Thrissur.

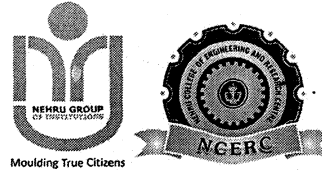


PROGRAM COORDINATOR

HEAD OF DEPARTMENT

PRINCIPAL

Nehru College of  
Engineering and Research Centre,  
Pampady, Thiruvilwamala, Thrissur Dt.  
Pin: .....



# CERTIFICATE OF COMPLETION

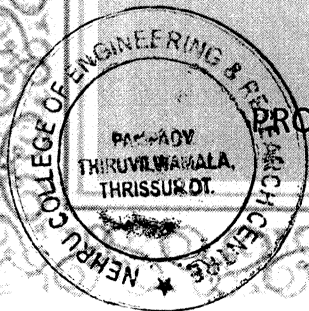
.....ANAND A S (NCAOEMTO13).....had successfully completed  
the Certified course “REFRIGERATION AND AIR CONDITIONING” during 2016-17  
conducted by the Department of Mechatronics Engineering, Nehru College of  
Engineering and Research Centre, Pampady, Thrissur.

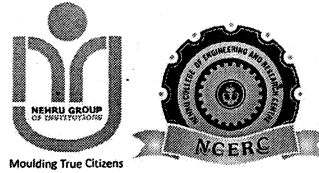
PROGRAM CO-ORDINATOR

HEAD OF DEPARTMENT

PRINCIPAL  
Nehru College of

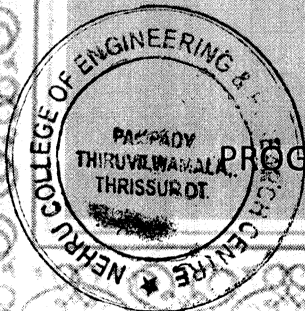
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thrissur Dt.  
Pin - 680 597 Kerala





# CERTIFICATE OF COMPLETION

.....AJAY ANAND C (NCE15MC005).....had successfully completed  
the Certified course "REFRIGERATION AND AIR CONDITIONING" during 2016-17  
conducted by the Department of Mechatronics Engineering, Nehru College of  
Engineering and Research Centre, Pampady, Thrissur.



PROGRAM CO-ORDINATOR

HEAD OF DEPARTMENT

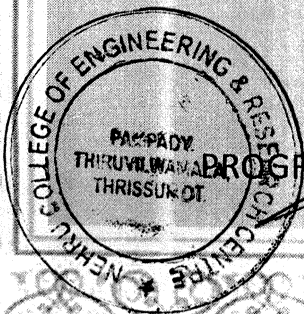
PRINCIPAL

Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala Thrissur (U)  
Pin 680 597 Kerala



# CERTIFICATE OF COMPLETION

..... SACHIN A S (NCE15MCO49)..... had successfully completed  
the Certified course "REFRIGERATION AND AIR CONDITIONING" during 2016-17  
conducted by the Department of Mechatronics Engineering, Nehru College of  
Engineering and Research Centre, Pampady, Thrissur.



PROGRAM CO-ORDINATOR

HEAD OF DEPARTMENT

PRINCIPAL  
Nehru College of

Engineering and Research Centre  
Pampady, Thiruvilwamala, Thrissur, Dt.  
Pinn - 680 597, Kerala



**NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)**

(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)



# MBA



NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
NEHRU SCHOOL OF MANAGEMENT  
NILA GARDENS, PAMPADY



NSM/Academic/2017/45

3rd March 2017

**CIRCULAR**

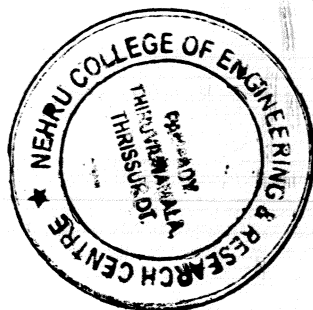
This is to inform all the students that Nehru School of Management is organizing a certificate program in Project Management for the management students at Kapila on the 9<sup>th</sup> March till 20<sup>th</sup> March 2017. All are invited to participate.

Director,

Nehru School of Management

CC:

The Principal, NCERC  
Campus Manager, NCERC  
Academic Office, NCERC



**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala, Thirissur Dt  
Pin 680 597 Kerala



NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
NEHRU SCHOOL OF MANAGEMENT  
NILA GARDENS, PAMPADY



NSM/Academic/2016/17

25/05/2016

**Yearly Academic Meeting**

**Minutes**

Point Discussed	Action taken	Responsibility
Academic timetable and activity plan	<ul style="list-style-type: none"><li>To prepare proper academic plan and timetable.</li><li>Activity plan for the year to be made</li></ul>	Ms. Chandrakala
Academic Quality	<ul style="list-style-type: none"><li>To prepare audit schedule for every quarter</li><li>To conduct quality improvement meeting</li><li>To select quality in-charge</li></ul>	Mr. Alex Ms. Suma
Admission Work	To be done as per need	Dr. Raj
Certificate Program	To organize a certificate program on Project Management	Director Mr. Alex
Refresher Course	To organize a refresher course in Economics	Ms. Chandrakala
Training Program	To organize training program in SPSS software	Mr. Alex Kuruvilla

Members

Director NSM:

Dr. KVS Raj

Ms. Chandrakala:

Academic Coordinator

Nehru School of Management

CC:

The Principal, NCERC

Campus Manager, NCERC

Academic Office, NCERC

Director,

Nehru School of Management



PRINCIPAL  
Nehru College of

Engineering and Research Centre  
Pampady, Thiruvilwamala, Thirissur Dt  
Pin 680 597 Kerala



NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
NEHRU SCHOOL OF MANAGEMENT  
NILA GARDENS, PAMPADY



NSM/Academic/2017

1<sup>st</sup> March 2017

To,

The Principal,

NCERC, Pampady

Dear Madam,

**Sub: Request to conduct Training Certificate course in Project management**

We are planning to organize a certificate course in Project Management for the students of MBA from 9<sup>th</sup> March 2017 till 20<sup>th</sup> March 2017. The sessions will be in the afternoon on all days. We kindly request you to approve it. The resource person is Mr. Alex Kuruvilla.

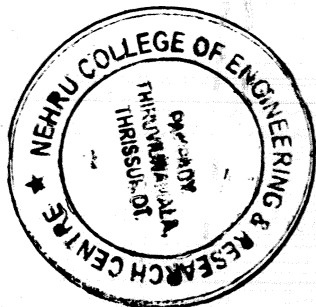
Thanking You,

*Approved*  
*Aswath*

*[Signature]*

Director,

Nehru School of Management



*[Signature]*

**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thirissur Dt  
Pin 680 597 Kerala



NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
NEHRU SCHOOL OF MANAGEMENT  
NILA GARDENS, PAMPADY



Certificate Course: Project Management

### Syllabus

#### Module I

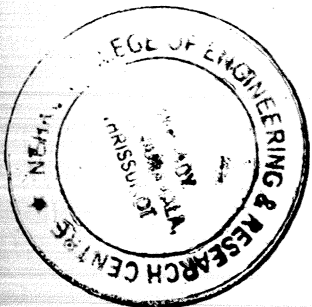
Project Management Concepts; Characteristics of a project - Need for project management roles of project managers in organizational environments - key objectives of project management - Evolution of project management - systems, Organizations and system methodologies

#### Module II

Project Development Cycle; Project life cycles - Conception - definition - execution operation - systems & procedures - Planning - Project organization structure and responsibilities - project management system.

#### Module III

People issues in project management - Change - external forces of change - effect of change on the project manager - Leadership and motivation - Communication - Team - Cultural and ethnic diversity - Setting goals and commitment



*[Handwritten signature]*

*[Handwritten signature]*

**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala, Thiruvananthapuram Dt  
Pin 680 597 Kerala

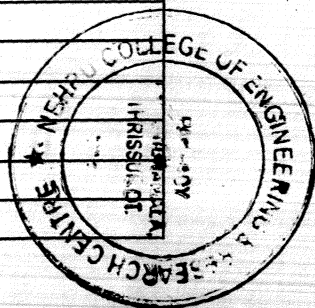
Nehru College of Engineering and research Centre


Departmer MBA

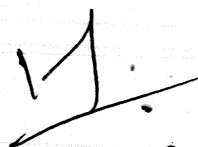
Program Project management

Student list

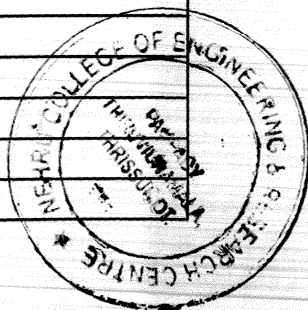
SI No	Name of the student
1	ABHILASH K UNNI
2	ADARSH S KUMAR
3	AISWARYA KRISHNADAS
4	AJAY KRISHNA S
5	AJITH A
6	AJMAL P P
7	AKHILA.K.M
8	AKSHAY R PILLAI
9	AMBILI.KC
10	ANEESHA RAJESH
11	ANITHA K SIVAKUMAR
12	ANJALI CHANDRAN
13	ANJALY C PRAKASH
14	ANOOP PS
15	ANU JOHN
16	ANUSREE.T.S
17	ARCHANA KR
18	ARJUN A
19	ARUN A G
20	ARUN V A
21	ASHIQ.V
22	ASWATHI.M
23	ASWATHI.PT
24	ASWIN T RAJU
25	BASIL WILSON
26	BLESSY FRANCIS
27	CHERIAN ABRAHAM
28	CHITHRA G
29	DEEPAK DAS T V
30	DEEPAK P S
31	DEEPTHI S
32	DIVYA S
33	FAHEEMA.P
34	GEO G KOOLA
35	HAREESH.H
36	HARITHA SARATH P
37	HASHIM T
38	JACQUELINE JOSE
39	JASIM M K
40	JAYAKRISHNAN K
41	JEES GEORGE
42	JERESH JOSEPH
43	JOICE JOHNSON



  
**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala, Thiruvananthapuram  
- Pin 680 597 Kerala



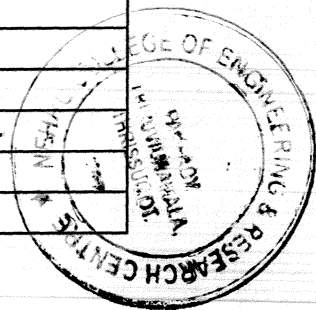
44	JUSTIN M B
45	KARTHIK A
46	KRIPIL KRISHNA
47	KRISHNAPRIYA C
48	MARIYA SHOBY
49	MERIN KUNJUMON
50	MITHUN KRISHNA P
51	MOHAMMED ASHIQ V K.
52	NEERAJA
53	NEETHU G
54	NEETHU KRISHNAN
55	N G PRADEEP
56	NILEENA MOHAN
57	NINYA C
58	NISHAD ABDUL AZEEZ T V
59	NISHAD B
60	NITISH.V.M
61	PARVATHY T
62	P R SREEKRISHNA
63	RAHUL
64	RAMDEV.K.S
65	RAMESH V
66	RAMSHAD K
67	REJ.P.J
68	RESHMA K
69	RESHMA.K
70	RESHMA MOHAN T
71	ROHINI.M.PANICKER
72	ROSANTO E A
73	ROSHNA RAHIM A
74	SACHIN SREEKUMAR
75	SHAFANA KHADEEJA
76	SHAISTA S
77	SHALOM PAUL
78	SHANIBA U K
79	SHEENA S
80	SHIBIN.K
81	SHRUTI MOHAN A
82	SIDHARTH V MENON
83	SIVANUNNI.P.S
84	SOORAJ.E
85	SREESHA P
86	SRUTHI P
87	SRUTHI S
88	SUHAIRA.K.P
89	SWARUN D
90	SWATHI M P
91	THASNIYA V P



*[Handwritten signature]*

**PRINCIPAL**  
Nehru College of  
Engineering and Research Centres  
Pampady, Thiruvilwamala, Thiruvananthapuram  
Pin 680 597 Kerala

92	VAISAG.MR
93	VAISHAK M
94	VARSHA B
95	VYSAKH RAJAN
96	AFEEFATHUNNISHA
97	APARNA C
98	ARATHI U
99	BIBIN N B
100	BINU SREE N V
101	HIMESH N
102	HIRANDAS P
103	JITHIN RAJ K T
104	MARY MEEKHUL
105	NAIR VARSHA
106	NEELAKANDHAN P P
107	NINA M R
108	NINDHU A
109	NITHU PRAKASH
110	P R YUDHI
111	RANJITH P P
112	RASHMI C S
113	SARANYA E
114	SHAMEEM
115	SREELATHA K S
116	SREERAG R
117	SRUTHI P
118	SURAG K S
119	VARSHA K V
120	V KRISHNAPRABHA
121	AJITH KUMAR P
122	ALEENA ROSE
123	ANJALI RAJESH
124	ATHIRA M NAIR
125	ATHIRA V K
126	DIVYA PRATHAPAN
127	JAYASREE T M
128	JENY T VINOD
129	KASHMEERA P
130	KEERTHANA R
131	KRISHNAPRIYA M
132	LINI P
133	MIMNA REVI
134	MINHAJUDHEEN M M
135	MRUDULA M
136	NIKHIL P S
137	P ANIL
138	RANJITHA
139	RAVITHA MENON

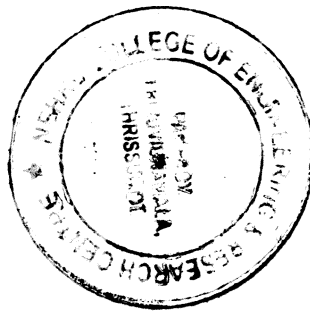


*[Handwritten signature]*

**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Panipady Thiruvilwamala, Thiruvananthapuram  
Pin 680 597 Kerala

140	ROSHNI
141	VISHNU P S
142	ASHISH
143	DEEPAK DENNY
144	DEVIPRASAD K K
145	DHANUSH N
146	DHRISYA S
147	GIRIPRABHU H
148	HARITHA A H
149	KRISHNADAS K P
150	KRISHNAKUMAR V

M



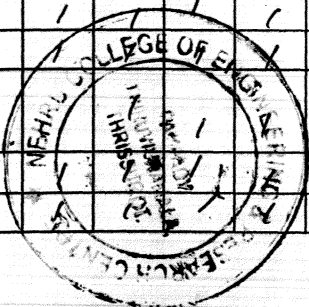
Handwritten signature

**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala, Thiruvananthapuram Dt  
Pin 680 597 Kerala

**Nehru College of Engineering and Research centre**

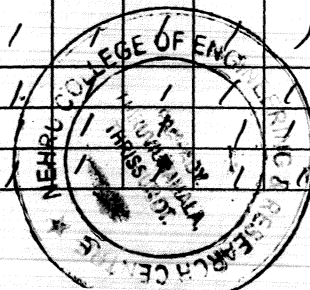
**Dept** MBA  
**Program** Certificate course in Project Management

Sl No	Name of the student	9th	10th	11th	13th	14th	15th	16th	17th	18th	19th
1	ABHILASH K UNNI	/	/	/	/	/	/	/	/	/	/
2	ADARSH S KUMAR	/	/	/	a	/	/	/	/	/	/
3	AISWARYA KRISHNADAS	/	/	/	/	/	/	/	/	/	/
4	AJAY KRISHNA S	/	/	/	/	/	/	/	/	/	/
5	AJITH A	/	/	/	/	/	/	/	/	/	/
6	AJMAL P P	/	/	/	/	/	/	/	/	/	/
7	AKHILA.K.M	/	/	/	/	/	/	/	/	/	/
8	AKSHAY R PILLAI	/	/	/	/	/	/	/	/	/	/
9	AMBILI.KC	/	/	/	a	/	/	/	/	/	/
10	ANEESHA RAJESH	/	/	/	/	/	a	/	/	/	/
11	ANITHA K SIVAKUMAR	/	/	/	/	/	/	/	/	/	/
12	ANJALI CHANDRAN	/	/	/	/	/	/	a	/	/	/
13	ANJALY C PRAKASH	/	/	/	/	/	/	a	/	/	/
14	ANOOP PS	/	/	/	/	/	/	a	/	/	/
15	ANU JOHN	/	/	/	/	/	/	/	/	/	/
16	ANUSREE.T.S	/	/	/	/	/	/	/	/	/	/
17	ARCHANA KR	/	/	/	/	/	/	/	/	/	/
18	ARJUN A	/	/	/	/	/	/	/	/	/	/
19	ARUN A G	/	/	/	/	/	/	/	/	/	/
20	ARUN V A	/	/	/	/	/	/	/	/	/	/
21	ASHIQ.V	/	/	/	/	/	/	/	/	/	/
22	ASWATHI.M	/	/	/	/	/	/	/	/	/	/
23	ASWATHI.PT	/	/	/	/	/	/	/	/	/	/
24	ASWIN T RAJU	/	/	/	/	/	/	/	/	/	/
25	BASIL WILSON	/	/	/	/	/	/	/	/	/	/
26	BLESSY FRANCIS	/	/	/	/	/	/	/	/	/	/
27	CHERIAN ABRAHAM	/	/	/	/	/	/	/	/	/	/
28	CHITHRA G	/	/	/	/	/	/	/	/	/	/
29	DEEPAK DAS T V	/	/	/	/	/	/	/	/	/	/
30	DEEPAK P S	/	/	/	/	/	/	/	/	/	/
31	DEEPTHI S	/	/	/	/	/	/	/	/	/	/
32	DIVYA S	/	/	/	/	/	/	/	/	/	/
33	FAHEEMA.P	/	/	/	/	/	/	/	/	/	/
34	GEO G KOOLA	/	/	/	/	/	/	/	/	/	/
35	HAREESH.H	/	/	/	/	/	/	/	/	/	/
36	HARITHA SARATH P	/	/	/	/	/	/	/	/	/	/
37	HASHIM T	/	/	/	/	/	/	/	/	/	/
38	JACQUELINE JOSE	/	/	/	/	/	/	/	/	/	/



**PRINCIPAL**  
 Nehru College of Engineering and Research Centre  
 Thiruvilwamala, Thrissur  
 Ph: 680 597 Kerala

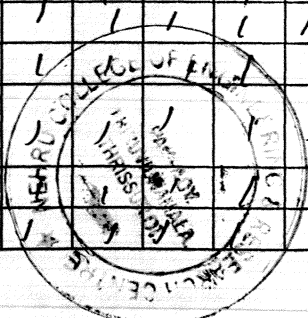
39	JASIM M K	/	/	/	/	/	/	/	/	/	/
40	JAYAKRISHNAN K	/	/	/	/	/	/	/	/	/	/
41	JEES GEORGE	/	/	/	/	/	/	/	/	/	/
42	JERESH JOSEPH	a	/	/	/	/	/	a	/	/	/
43	JOICE JOHNSON	/	/	/	/	/	/	/	/	/	/
44	JUSTIN M B	/	/	/	/	/	/	/	/	a	/
45	KARTHIK A	/	/	/	/	/	/	/	/	/	/
46	KRIPIL KRISHNA	/	/	/	/	/	/	/	/	/	/
47	KRISHNAPRIYA C	/	/	/	/	/	/	/	/	/	/
48	MARIYA SHOBY	/	/	/	/	/	/	/	/	/	/
49	MERIN KUNJUMON	/	/	/	/	/	/	/	/	/	/
50	MITHUN KRISHNA P	/	/	/	/	/	/	/	/	/	/
51	MOHAMMED ASHIQ V K	/	/	/	/	/	/	/	/	/	/
52	NEERAJA	/	a	/	/	/	/	/	/	/	/
53	NEETHU G	/	/	/	/	/	/	/	/	/	/
54	NEETHU KRISHNAN	/	/	/	/	/	/	/	/	/	/
55	N G PRADEEP	/	/	/	/	a	/	/	/	/	/
56	NILEENA MOHAN	/	/	/	/	/	/	/	/	/	/
57	NINYA C	/	/	/	/	/	/	/	/	/	/
58	NISHAD ABDUL AZEEZ T V	/	/	/	/	/	/	/	a	/	/
59	NISHAD B	/	/	/	/	/	/	/	/	/	/
60	NITISH.V.M	/	/	/	/	a	/	/	/	/	/
61	PARVATHY T	/	/	/	/	/	/	/	/	/	/
62	P R SREEKRISHNA	a	/	/	/	/	/	/	/	/	/
63	RAHUL	/	/	/	/	/	/	/	/	/	/
64	RAMDEV.K.S	/	/	/	/	/	/	/	/	/	/
65	RAMESH V	/	/	/	/	/	/	/	/	/	/
66	RAMSHAD K	/	/	/	/	/	/	/	/	/	/
67	REJI.P.J	/	/	/	/	/	/	/	/	/	/
68	RESHMA K	/	/	/	/	/	/	/	/	/	/
69	RESHMA.K	/	/	/	/	/	/	/	/	/	/
70	RESHMA MOHAN T	/	/	/	/	/	/	/	/	/	/
71	ROHINI.M.PANICKER	/	/	/	/	/	/	/	a	/	/
72	ROSANTO E A	/	/	/	/	/	/	/	/	/	/
73	ROSHNA RAHIM A	/	/	/	/	/	/	/	/	/	/
74	SACHIN SREEKUMAR	/	/	/	/	/	/	/	/	/	/
75	SHAFANA KHADEEJA	/	/	/	/	/	/	/	/	/	/
76	SHAISTA S	/	/	/	/	/	/	/	/	/	/
77	SHALOM PAUL	/	/	/	/	/	/	/	a	/	/
78	SHANIBA U K	/	/	/	/	/	/	/	/	/	/



PRINCIPAL  
Nehru College of  
Engineering and Research Ce  
Thripunithura Thiruvananthapuram  
Pin: 680 597 Kerala

Handwritten signature or mark.

79	SHEENA S	/	/	/	/	/	/	/	/	/	/
80	SHIBIN.K	/	/	/	/	/	/	/	/	/	/
81	SHRUTI MOHAN A	/	/	/	/	/	/	/	/	/	/
82	SIDHARTH V MENON	/	/	/	/	/	/	/	/	/	/
83	SIVANUNNI.P.S	/	/	/	/	/	/	/	/	/	/
84	SOORAJ.E	/	/	/	/	/	/	/	/	/	/
85	SREESHA P	/	/	/	/	/	/	/	/	/	/
86	SRUTHI P	/	/	/	/	/	/	/	/	/	/
87	SRUTHI S	/	/	/	/	/	/	/	/	/	/
88	SUHAIRA.K.P	/	/	/	/	/	/	/	/	/	/
89	SWARUN D	/	/	/	/	/	/	/	/	/	/
90	SWATHI M P	/	/	/	/	/	/	/	/	/	/
91	THASNIYA V P	/	/	/	/	/	/	/	/	/	/
92	VAISAG.MR	/	/	/	/	/	/	/	/	/	/
93	VAISHAK M	/	/	/	/	/	/	/	/	/	/
94	VARSHA B	/	/	/	/	/	/	/	/	/	/
95	VYSAKH RAJAN	/	/	/	/	/	/	/	/	/	/
96	AFEEFATHUNNISHA	/	/	/	/	/	/	/	/	/	/
97	APARNA C	/	/	/	/	/	/	/	/	/	/
98	ARATHI U	/	/	/	/	/	/	/	/	/	/
99	BIBIN N B	/	/	/	/	/	/	/	/	/	/
100	BINU SREE N V	/	/	/	/	/	/	/	/	/	/
101	HIMESH N	/	/	/	/	/	/	/	/	/	/
102	HIRANDAS P	/	/	/	/	/	/	/	/	/	/
103	JITHIN RAJ K T	/	/	/	/	/	/	/	/	/	/
104	MARY MEEKHUL	/	/	/	/	/	/	/	/	/	/
105	NAIR VARSHA	/	/	/	/	/	/	/	/	/	/
106	NEELAKANDHAN P P	/	/	/	/	/	/	/	/	/	/
107	NINA M R	/	/	/	/	/	/	/	/	/	/
108	NINDHU A	/	/	/	/	/	/	/	/	/	/
109	NITHU PRAKASH	/	/	/	/	/	/	/	/	/	/
110	P R YUDHI	/	/	/	/	/	/	/	/	/	/
111	RANJITH P P	/	/	/	/	/	/	/	/	/	/
112	RASHMI C S	/	/	/	/	/	/	/	/	/	/
113	SARANYA E	/	/	/	/	/	/	/	/	/	/
114	SHAMEEM	/	/	/	/	/	/	/	/	/	/
115	SREELATHA K S	/	/	/	/	/	/	/	/	/	/
116	SREERAG R	/	/	/	/	/	/	/	/	/	/
117	SRUTHI P	/	/	/	/	/	/	/	/	/	/
118	SURAG K S	/	/	/	/	/	/	/	/	/	/
119	VARSHA K V	/	/	/	/	/	/	/	/	/	/
120	V KRISHNAPRABHA	/	/	/	/	/	/	/	/	/	/
121	AJITH KUMAR P	/	/	/	/	/	/	/	/	/	/
122	ALEENA ROSE	/	/	/	/	/	/	/	/	/	/

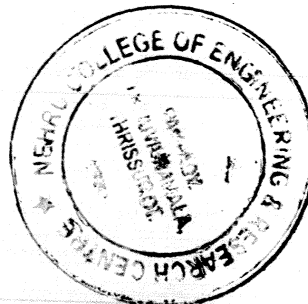


PRINCIPAL  
 Nehru College of  
 Engineering and Research Ce  
 Thiruvilwamala Thirissu  
 680 597 Kerala

Handwritten signature or mark.

123	ANJALI RAJESH	/	/	/	/	/	/	/	/	/	/
124	ATHIRA M NAIR	/	/	/	/	/	/	/	/	/	/
125	ATHIRA V K	/	/	/	/	/	/	/	/	/	/
126	DIVYA PRATHAPAN	/	/	/	/	/	/	/	/	/	/
127	JAYASREE T M	/	/	/	/	/	/	/	/	/	/
128	JENY T VINOD	/	/	/	/	/	/	/	/	/	/
129	KASHMEERA P	/	/	/	/	/	/	/	/	/	/
130	KEERTHANA R	/	/	/	/	/	/	/	/	/	/
131	KRISHNAPRIYA M	/	/	/	/	/	/	/	/	/	/
132	LINI P	/	/	/	/	/	/	/	/	/	/
133	MIMNA REVI	/	/	/	/	/	/	/	/	/	/
134	MINHAJUDHEEN M M	/	/	/	/	/	/	/	/	/	/
135	MRUDULA M	/	/	/	/	/	/	/	/	/	/
136	NIKHIL P S	/	/	/	/	/	/	/	/	/	/
137	P ANIL	/	/	/	/	/	/	/	/	/	/
138	RANJITHA	/	/	/	/	/	/	/	/	/	/
139	RAVITHA MENON	/	/	/	/	/	/	/	/	/	/
140	ROSHNI	/	/	/	/	/	/	/	/	/	/
141	VISHNU P S	/	/	/	/	/	/	/	/	/	/
142	ASHISH	/	/	/	/	/	/	/	/	/	/
143	DEEPAK DENNY	/	/	/	/	/	/	/	/	/	/
144	DEVIPRASAD K K	/	/	/	/	/	/	/	/	/	/
145	DHANUSH N	/	/	/	/	/	/	/	/	/	/
146	DHRISYA S	/	/	/	/	/	/	/	/	/	/
147	GIRIPRABHU H	/	/	/	/	/	/	/	/	/	/
148	HARITHA A H	/	/	/	/	/	/	/	/	/	/
149	KRISHNADAS K P	/	/	/	/	/	/	/	/	/	/
150	KRISHNAKUMAR V	/	/	/	/	/	/	/	/	/	/


11



*[Handwritten signature]*

**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Panipady Thiruvilwamala, Thiruvananthapuram  
Pin 680 597 Kerala



NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
NEHRU SCHOOL OF MANAGEMENT  
NILA GARDENS, PAMPADY



Nehru School of Management

Project Management

Question Paper

Time: One hours

Maximum : 48 marks

Answer ALL questions.

PART A

(48 marks)

1. A project is basically a \_\_\_\_\_ activity.

- (A) temporary
- (B) permanent
- (C) continue
- (D) global

2. Which of the following statement is NOT true about a project?

- (A) It is temporary
- (B) It has an end date
- (C) It contains no risk
- (D) It is unique and brings change

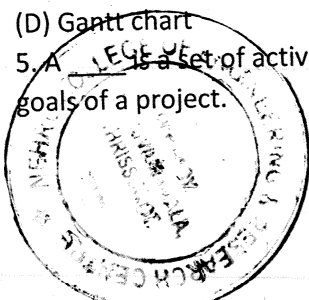
3. Which of the following is NOT considered as a project?


- (A) building another room
- (B) maintenance of the building
- (C) Switching to new business process
- (D) Renovating the conference room

4. A graphical chart that shows project tasks against time is known as

- (A) milestone
- (B) goal
- (C) PERT chart
- (D) Gantt chart

5. A \_\_\_\_\_ is a set of activities which are networked in an order and aimed towards achieving the goals of a project.



  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala, Thrissur Dt  
Pin 680 597 Kerala

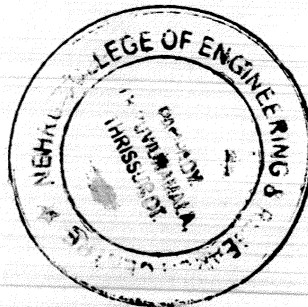






NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
NEHRU SCHOOL OF MANAGEMENT  
NILA GARDENS, PAMPADY



- (A) Project(B) Process(C) Project management(D) Project cycle
6. Resources refers to
- (A) Manpower(B) Machinery(C) Materials(D) All of the above
7. Developing a technology is an example of
- (A) Process(B) Project(C) Scope(D) All of the above
8. The project life cycle consists of
- (A) Understanding the scope of the project(B) Objectives of the project(C) Formulation and planning various activities(D) All of the above
9. Following is(are) the responsibility(ies) of the project manager.
- (A) Budgeting and cost control
- (B) Allocating resources
- (C) Tracking project expenditure
- (D) All of the above
10. Following are the phases of Project Management Life Cycle. Arrange them in correct order
1. Design, 2. Marketing, 3. Analysis and evaluation, 4. Inspection, testing and delivery
- (A) 3-2-1-4(B) 1-2-3-4(C) 2-3-1-4(D) 4-3-2-1
11. Design phase consist of
- (A) Input received(B) Output received(C) Both (A) and (B)(D) None of the above
12. Project performance consists of
- (A) Time(B) Cost(C) Quality(D) All of the above
13. Five dimensions that must be managed on a project
- (A) Constraint, Quality, Cost, Schedule, Staff(B) Features, Quality, Cost, Schedule, Staff(C) Features, priority, Cost, Schedule, Staff(D) Features, Quality, Cost, Schedule, customer
14. Resource requirement in project becomes constant while the project is in its \_\_\_\_\_ progress stage.
- (A) 40 to 55%(B) 55 to 70%(C) 70 to 80%(D) 80 to 95%
15. The probability of completing the project can be estimated based upon the \_\_\_\_\_
- (A) Uniform distribution curve
- (B) Normal distribution curve.
- (C) U-shaped distribution curve



  
**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala, Thiruvananthapuram  
Pin 680 597 Kerala





NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
NEHRU SCHOOL OF MANAGEMENT  
NILA GARDENS, PAMPADY



(D) None of the above

16. In the initial stage of the project the probability of completing the project is \_\_\_\_.

(A) Zero (B) High (C) Low (D) Any of the above

17. The entire process of a project may be considered to be made up of number of sub process placed in different stage called the

(A) Technical key resources (B) Work key structure (C) Work Breakdown Structure (WBS). (D) None of the above

18. Tool used for comparison of the proposed project to complete projects of a similar nature whose costs are known.

(A) Algorithmic model (B) Expert judgment (C) Top down (D) Analogy

19. Each component of the software product is separately estimated and the results aggregated to produce an estimate for the overall job.

(A) Algorithmic model (B) Expert judgment (C) Bottom-up (D) Top down

20. Following is (are) the component(s) of risk management

(A) Risk Assessment (B) Risk Control (C) Risk Ranking (D) All of the above

21. Following are the characteristics of Project Mindset.

(A) Time, Responsiveness, Information sharing, Processes, structured planning

(B) Time, Project management, Information sharing, Processes, structured planning

(C) Time, Responsiveness, Information sharing, capability, structured planning

(D) Time, Responsiveness, Information sharing, Processes, project planning

22. "Devising and maintaining a workable scheme to accomplish the business need" is

(A) Initiating process (B) Planning process (C) Executing process (D) Controlling process

23. Controlling the changes in the project may affect

(A) The progress of the project

(B) Stage cost

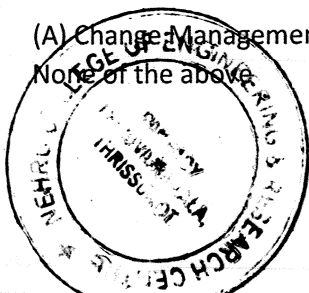
(C) Project scope

(D) All of the above

24. Following is (are) the tool(s) for changing a process

(A) Change Management System (CMS) (B) Configuration Management (CM) (C) Both (A) and (B) (D)

None of the above



*[Handwritten signature]*

*[Handwritten signature]*  
**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Pampady, Nilamangalam, Nilasseri, Dr  
Kerala



NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
NEHRU SCHOOL OF MANAGEMENT  
NILA GARDENS, PAMPADY

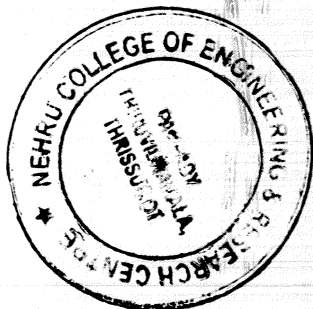


Nehru School of Management

Project Management

Answer Key

1. A.
2. C
3. C
4. D
5. B
6. D
7. D
8. D
9. D
10. B
11. C
12. D
13. B
14. D
15. D
16. C
17. C
18. D
19. A
20. D
21. D
22. D
23. D
24. C



**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala, Thirissur District  
Pin 680 597 Kerala



NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
NEHRU SCHOOL OF MANAGEMENT  
NILA GARDENS, PAMPADY



Certificate Course

Subject Name: Project Management

Student Name: AJITH

1. b

2. b

3. a

4. a

5. c

6. c

7. a

8. a

9. b

10. b

11. a

12. a

13. b

14. b

15. c

16. b

17. a

18. c

19. a

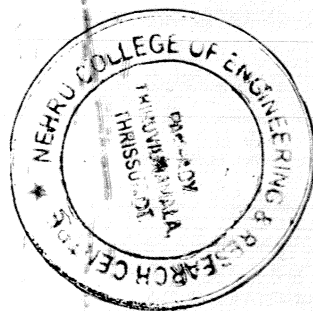
20. b

21. b

22. c

23. c

24. c



37

YK

PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala, Thirissur Dist  
Pin 680 597 Kerala



NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
NEHRU SCHOOL OF MANAGEMENT  
NILA GARDENS, PAMPADY



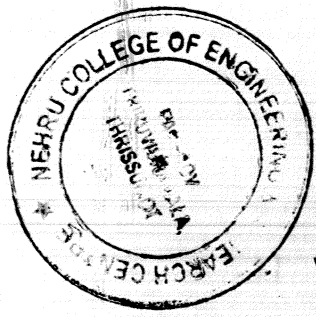
Certificate Course

Subject Name: *Project Management*

Student Name: *Arjuna C*

- 1 B
- 2 B
- 3 A
- 4 A
- 5 C
- 6 C
- 7 A
- 8 A
- 9 B
- 10 B
- 11 C
- 12 C
- 13 B

33



*[Handwritten signature]*

PRINCIPAL  
Neeru College of  
Engineering and Research Centre  
Pampady Thiruvillyamala, Coimbatore, D.K.  
Dist. Coimbatore, Kerala

14 B

15 C

16 B

17 A

18 C

19 B

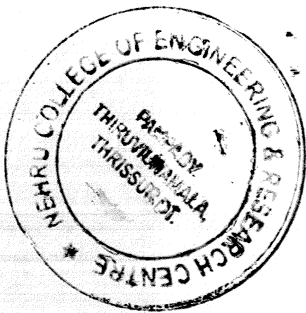
20 B

21 B

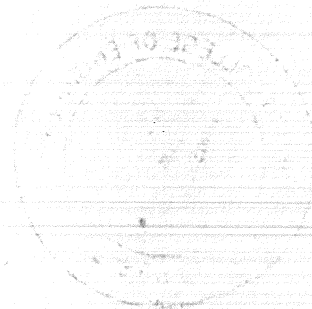
22 C

23 C

24 C



  
**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala, Thirissur  
Pin : 680 597 Kerala





NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
NEHRU SCHOOL OF MANAGEMENT  
NILA GARDENS, PAMPADY



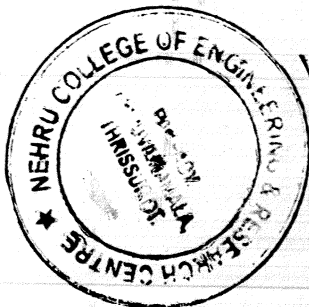
Certificate Course

Subject Name: *Project Management*

Student Name: *Arun V A*

- 1 A
- 2 B-
- 3 C
- 4 C
- 5 B
- 6 C
- 7 C
- 8 A
- 9 B
- 10 C
- 11 C
- 12 A
- 13 A
- 14 A

*41*



PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala, Thirssur Dt  
Pin 680 597 Kerala

15 B

16 C

17 B

18 C

19 C


20 B

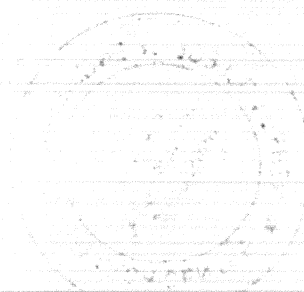
21 B

22 A

23 A

24 B

  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Thiruvilwamala, Thiruvananthapuram Dt  
Pin 680 597 Kerala

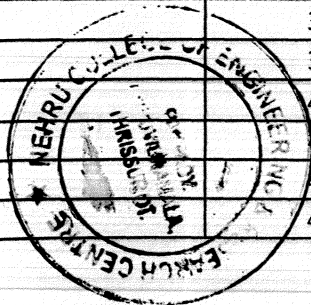


Nehru College of Engineering and research Centre

Departmer MBA

Program Project management

Mark List		Marks
SI No	Name of the student	
1	ABHILASH K UNNI	44
2	ADARSH S KUMAR	41
3	AISWARYA KRISHNADAS	37
4	AJAY KRISHNA S	36
5	AJITH A	37
6	AJMAL P P	39
7	AKHILA.K.M	40
8	AKSHAY R PILLAI	41
9	AMBILI.KC	36
10	ANEESHA RAJESH	35
11	ANITHA K SIVAKUMAR	34
12	ANJALI CHANDRAN	33
13	ANJALY C PRAKASH	32
14	ANOOP PS	34
15	ANU JOHN	35
16	ANUSREE.T.S	37
17	ARCHANA KR	37
18	ARJUN A	34
19	ARUN A G	40
20	ARUN V A	41
21	ASHIQ.V	41
22	ASWATHI.M	43
23	ASWATHI.PT	44
24	ASWIN T RAJU	41
25	BASIL WILSON	37
26	BLESSY FRANCIS	36
27	CHERIAN ABRAHAM	37
28	CHITHRA G	39
29	DEEPAK DAS T V	40
30	DEEPAK P S	41
31	DEEPTHI S	36
32	DIVYA S	35
33	FAHEEMA.P	34
34	GEO G KOOLA	33
35	HAREESH.H	32
36	HARITHA SARATH P	34
37	HASHIM T	35
38	JACQUELINE JOSE	37
39	JASIM M K	37
40	JAYAKRISHNAN K	34
41	JEES GEORGE	40
42	JERESH JOSEPH	41
43	JOICE JOHNSON	41
44	JUSTIN M B	43



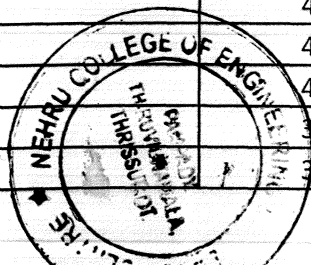
*Ch*

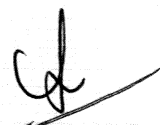
**PRINCIPAL**

Nehru College of  
Engineering and Research Centre,  
Thiruvilwamala, Thrissur Dt,  
Pin 680 597 Kerala

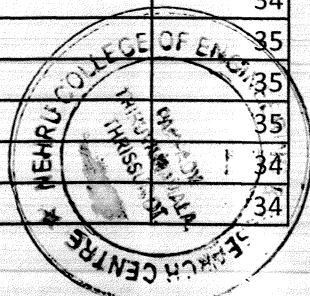
*M*


45	KARTHIK A	44
46	KRIPIL KRISHNA	41
47	KRISHNAPRIYA C	37
48	MARIYA SHOBY	36
49	MERIN KUNJUMON	37
50	MITHUN KRISHNA P	39
51	MOHAMMED ASHIQ V K	40
52	NEERAJA	41
53	NEETHU G	36
54	NEETHU KRISHNAN	35
55	N G PRADEEP	34
56	NILEENA MOHAN	33
57	NINYA C	32
58	NISHAD ABDUL AZEEZ T V	34
59	NISHAD B	35
60	NITISH.V.M	37
61	PARVATHY T	37
62	P R SREEKRISHNA	34
63	RAHUL	40
64	RAMDEV.K.S	41
65	RAMESH V	41
66	RAMSHAD K	43
67	REJI.P.J	44
68	RESHMA K	41
69	RESHMA.K	37
70	RESHMA MOHAN T	36
71	ROHINI.M.PANICKER	37
72	ROSANTO E A	39
73	ROSHNA RAHIM A	40
74	SACHIN SREEKUMAR	41
75	SHAFANA KHADEEJA	36
76	SHAISTA S	35
77	SHALOM PAUL	34
78	SHANIBA U K	33
79	SHEENA S	32
80	SHIBIN.K	34
81	SHRUTI MOHAN A	35
82	SIDHARTH V MENON	37
83	SIVANUNNI.P.S	37
84	SOORAJ.E	34
85	SREESHA P	40
86	SRUTHI P	41
87	SRUTHI S	41
88	SUHAIRA.K.P	43
89	SWARUN D	44
90	SWATHI M P	41
91	THASNIYA V P	37
92	VAISAG.MR	36



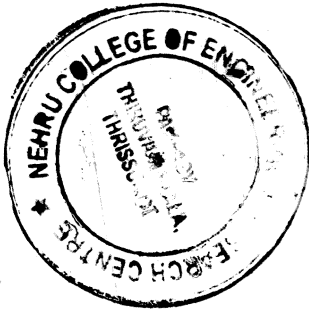
  
**PRINCIPAL**  
 Nehru College of  
 Engineering and Research Centre  
 Panapattanam, Thrissur Dt  
 Kerala - 686 597

93	VAISHAK M	37
94	VARSHA B	39
95	VYSAKH RAJAN	40
96	AFEFATHUNNISHA	41
97	APARNA C	36
98	ARATHI U	35
99	BIBIN N B	34
100	BINU SREE N V	33
101	HIMESH N	32
102	HIRANDAS P	34
103	JITHIN RAJ K T	35
104	MARY MEEKHUL	37
105	NAIR VARSHA	37
106	NEELAKANDHAN P P	34
107	NINA M R	40
108	NINDHU A	41
109	NITHU PRAKASH	41
110	P R YUDHI	43
111	RANJITH P P	44
112	RASHMI C S	41
113	SARANYA E	37
114	SHAMEEM	36
115	SREELATHA K S	37
116	SREERAG R	39
117	SRUTHI P	40
118	SURAG K S	41
119	VARSHA K V	36
120	V KRISHNAPRABHA	35
121	AJITH KUMAR P	34
122	ALEENA ROSE	33
123	ANJALI RAJESH	32
124	ATHIRA M NAIR	34
125	ATHIRA V K	35
126	DIVYA PRATHAPAN	37
127	JAYASREE T M	37
128	JENY T VINOD	34
129	KASHMEERA P	40
130	KEERTHANA R	41
131	KRISHNAPRIYA M	41
132	LINI P	43
133	MIMNA REVI	43
134	MINHAJUDHEEN M M	44
135	MRUDULA M	34
136	NIKHIL P S	35
137	P ANIL	35
138	RANJITHA	35
139	RAVITHA MENON	34
140	ROSHNI	34



  
**PRINCIPAL**  
 Nehru College of  
 Engineering and Research Centre  
 Pampady Thiruvilwamala, Thiruvananthapuram  
 Pin 680 597 Kerala

141	VISHNU P S	33
142	ASHISH	43
143	DEEPAK DENNY	42
144	DEVIPRASAD K K	45
145	DHANUSH N	44
146	DHRISYA S	43
147	GIRIPRABHU H	44
148	HARITHA A H	45
149	KRISHNADAS K P	43
150	KRISHNAKUMAR V	41



M

*cd*

**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Panipady Thiruvilwamala, Thiruvananthapuram District  
Pin 680 597 Kerala

Nehru College of Engineering and Research Centre  
Management Department

Cordially invite all Management students to a  
certificate course on  
"Project Management"

By

Mr. Alex Kuruvilla



Program Coordinator: Ms. Chandrakala

*[Handwritten signature]*

PRINCIPAL  
Nehru College of

Engineering and Research Centre  
Panampady Thiruvilwamala, Thirissur Dt  
Pin -680 597 Kerala

**Dates: 9<sup>th</sup> to 20<sup>th</sup> March 2017**

## **Program Chart**

### **Day 1**

**1.00 PM Director MBA address**

**1.15 PM Introduction of Resource Person by Coordinator**

**1.30 to 2.30 PM Session**

**2.30 to 3.30 PM Session**

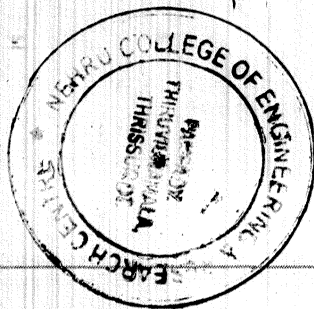
**3.45 to 4.45 PM Session**

### **All other Days**

**1.30 to 2.30 PM Session**

**2.30 to 3.30 PM Session**

**3.45 to 4.45 PM Session**



**PRINCIPAL**

Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala Thiruvananthapuram,  
Pin 680 597 Kerala



# NEHRU COLLEGE OF ENGINEERING & RESEARCH CENTRE



Accredited by NAAC  
An ISO 9001-2015 certified Institution, Approved by AICTE, New Delhi  
Affiliated to APJ Abdul Kalam Technological University  
PAMPADY, THIRUVILWAMALA, THRISSUR (Dist)

# Certificate

*This certificate is proudly presented to*

*Mr./Ms. .... RESHMA ..... K. .... of*

*Nehru College of Engineering and Research Centre,*

*for successfully completing the course*

*in...Project...Management*

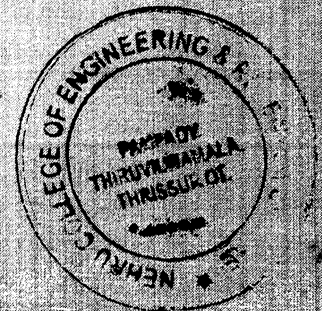
*and for passing the final exam.*

PROGRAM CO-ORDINATOR  
NSM

Director  
NSM

PRINCIPAL  
NCERC

PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala, Thrissur  
Pin 680 597 Kerala





# NEHRU COLLEGE OF ENGINEERING & RESEARCH CENTRE



Accredited by NAAC  
An ISO 9001-2015 certified Institution, Approved by AICTE, New Delhi  
Affiliated to APJ Abdul Kalam Technological University  
PAMPADY, THIRUVILWAMALA, THRISSUR (Dist)

# Certificate

*This certificate is proudly presented to*

*Mr./Ms..... RAHUL..... of*

*Nehru College of Engineering and Research Centre,*

*for successfully completing the course*

*in... Project... Management*

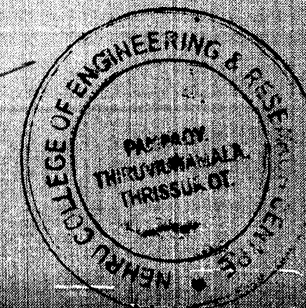
*and for passing the final exam.*

PROGRAM CO-ORDINATOR  
NSM

Director  
NSM

PRINCIPAL  
NCERC

PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thrissur Dist  
Pin 680 597 Kerala





# NEHRU COLLEGE OF ENGINEERING & RESEARCH CENTRE



Accredited by NAAC  
An ISO 9001-2015 certified Institution, Approved by AICTE, New Delhi  
Affiliated to APJ Abdul Kalam Technological University  
PAMPADY, THIRUVILWAMALA, THRISSUR (Dist)

# Certificate

*This certificate is proudly presented to*

*Mr./Ms. SRUTHI P..... of*

*Nehru College of Engineering and Research Centre,*

*for successfully completing the course*

*in...Project...Management.*

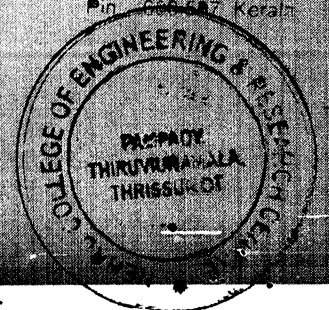
*and for passing the final exam.*

PROGRAM CO-ORDINATOR  
NSM

Director  
NSM

PRINCIPAL  
NCERC

PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala, Thrissur  
Pin - 686 507 Kerala





**NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)**

(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)



# **Electronics and Communication Engineering**



NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)  
(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University,  
Kerala)



ELECTRONICS AND COMMUNICATION DEPARTMENT

NOTICE

5.01.2016

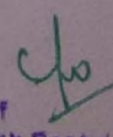
Department has decided to conduct a certificate course on **“Embedded C Programming And Interfacing“** on second and fourth Saturdays during this academic year 2016-17. The duration of the course will be for a period of 30 hours. The objective of the course is to impart knowledge on latest developments in embedded programming and interfacing strategies. This course will act as a key for enhancing know how of students on hardware and software sections of an embedded system

The 2013-17 batch admissions (UG) of ECE department are eligible for this course. All concerned students should attend the entire course without fail. Attendance is compulsory.

Copy:

1. Department Notice Board
2. Staff advisors (For Information to students)
3. Office file



HoD  
PRINCIPAL   
Nehru College of  
Engineering and Research Centre  
Palapady Thiruvilwamala, Thrissur Dt.  
Pin - 680 597 Kerala



NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)



(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)

FROM,

RAHUL M NAIR,

ASSISTANT PROFESSOR,

ECE DEPARTMENT, NCERC, PAMPADY.

TO,

THE PRINCIPAL,

NCERC, PAMPADY.

Through HOD

Respected Sir/Madam,

SUBJECT:-Request for conducting a certificate Course Reg.

RESOURCE PERSON:-EMBICS TECHNOLOGIES PVT LTD.

Department of Electronics & communication Engineering, NCERC, is planning to conduct an Add-On Course on "EMBEDDED C PROGRAMMING & INTERFACING" from 11-1-16. The course is scheduled as a 60 hour program. The main objective of this course is to provide students an understanding of programming based on Embedded C. Kindly request you to grant the permission for conducting the sessions.

All UG/ Students of ECE Dept,are eligible for this course.

Thanking you for your consideration. I look forward to your response soon.

Yours sincerely,

Place: Pampady

Date: 5/1/16

HOD

*permitted*



PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thrissur Dt  
Pin 680 597 Kerala



NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)

(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)



NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(ACCREDITED BY NAAC)

PAMPADY, THIRUVILWAMALA, THRISSUR DIST.

MINUTES OF DEPARTMENT ADVISORY COMMITTEE MEETING HELD ON 11/07/2016

A meeting of the Department Advisory Committee (DAC) was held on 05/01/16 at 1:00 PM in the chamber of HoD, ECE department.

The following members were present:

1. Dr S Rajkumar-HoD, ECE Dept.
2. Mr. Rahul M Nair-Assistant Professor, ECE Dept.
3. Mr. Nithin S S-Assistant Professor, ECE Dept.
4. Mrs. Sajitha A S-Assistant Professor, ECE EEE Dept.
5. Mrs. Lisa C-Assistant Professor, ECE Dept.

The following decisions were taken:

1. It was decided to conduct a certificate course on "EMBEDDED C PROGRAMMING AND INTERFACING" from 11/1/2016 for a period of 30 hours.
2. The course will update the technical knowledge of students in the latest developments related to the field of coding.
3. It was decided to provide the course to all UG students.
4. Also, it was decided to ensure compulsory attendance and staff advisors should monitor the same.

The meeting came to an end at 1:45 PM.



HoD

PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala, Thirissur Dt  
Pin - 680 597 Kerala



NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)

(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)



COURSE NAME:- EMBEDDED C PROGRAMMING AND INTERFACING (2017-18)

STUDENTS ENROLLMENT LIST

Reg No	Name
NCE16EC001	Abhinaya Visakhan
NCE16EC002	Ahalya S Kumar
NCE16EC003	Aiswarya R
NCE16EC005	Aiswarya Swamy
NCE16EC006	Aiswarya T
NCE16EC004	Aiswarya.k
NCE16EC007	Ajay C
NCE16EC008	Akhila B
NCE16EC009	Akhila P
NCE16EC010	Akshaya V M
NCE16EC012	Anaswara.k
NCE16EC013	Aneesha Prasad
NCE16EC014	Anjali Krishnan
NCE16EC015	Anshima Raj Ep
NCE16EC016	Ansiya P A
NCE16EC017	Aparna.p.p
NCE16EC018	Aswani.m.u
NCE16EC019	Athul Gopinath
NCE16EC020	Athul P.s.
NCE16EC021	Binzila V



*Carb*

**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Pangady Thiruvananthapuram, Thiruvananthapuram  
Pin: 680 507 Kerala



# NEHRU COLLEGE OF ENGINEERING & RESEARCH CENTRE

(Accredited by NAAC)

Pattany, Tiruvallur, TN



Attendance Sheet for Semesters Course "ELECTRONICS & COMMUNICATION ENGINEERING"

Electronics & Communication Engineering(UG) - 2016-17 Batch

Sl. No.	Roll No.	Name	10/08/16	17/08/16	24/08/16	31/08/16	07/09/16	14/09/16	21/09/16	28/09/16	05/10/16	12/10/16	19/10/16	26/10/16	02/11/16	09/11/16	16/11/16	23/11/16	30/11/16	07/12/16	14/12/16	21/12/16	28/12/16	04/01/17	11/01/17	18/01/17	25/01/17	01/02/17	08/02/17	15/02/17	22/02/17	01/03/17	08/03/17	15/03/17	22/03/17	29/03/17	05/04/17	12/04/17	19/04/17	26/04/17	03/05/17	10/05/17	17/05/17	24/05/17	31/05/17	07/06/17	14/06/17	21/06/17	28/06/17	05/07/17	12/07/17	19/07/17	26/07/17	02/08/17	09/08/17	16/08/17	23/08/17	30/08/17	06/09/17	13/09/17	20/09/17	27/09/17	04/10/17	11/10/17	18/10/17	25/10/17	01/11/17	08/11/17	15/11/17	22/11/17	29/11/17	06/12/17	13/12/17	20/12/17	27/12/17	03/01/18	10/01/18	17/01/18	24/01/18	31/01/18	07/02/18	14/02/18	21/02/18	28/02/18	06/03/18	13/03/18	20/03/18	27/03/18	03/04/18	10/04/18	17/04/18	24/04/18	01/05/18	08/05/18	15/05/18	22/05/18	29/05/18	05/06/18	12/06/18	19/06/18	26/06/18	03/07/18	10/07/18	17/07/18	24/07/18	31/07/18	07/08/18	14/08/18	21/08/18	28/08/18	04/09/18	11/09/18	18/09/18	25/09/18	02/10/18	09/10/18	16/10/18	23/10/18	30/10/18	06/11/18	13/11/18	20/11/18	27/11/18	04/12/18	11/12/18	18/12/18	25/12/18	01/01/19	08/01/19	15/01/19	22/01/19	29/01/19	05/02/19	12/02/19	19/02/19	26/02/19	05/03/19	12/03/19	19/03/19	26/03/19	02/04/19	09/04/19	16/04/19	23/04/19	30/04/19	07/05/19	14/05/19	21/05/19	28/05/19	04/06/19	11/06/19	18/06/19	25/06/19	02/07/19	09/07/19	16/07/19	23/07/19	30/07/19	06/08/19	13/08/19	20/08/19	27/08/19	03/09/19	10/09/19	17/09/19	24/09/19	01/10/19	08/10/19	15/10/19	22/10/19	29/10/19	05/11/19	12/11/19	19/11/19	26/11/19	03/12/19	10/12/19	17/12/19	24/12/19	31/12/19	07/01/20	14/01/20	21/01/20	28/01/20	04/02/20	11/02/20	18/02/20	25/02/20	03/03/20	10/03/20	17/03/20	24/03/20	31/03/20	07/04/20	14/04/20	21/04/20	28/04/20	05/05/20	12/05/20	19/05/20	26/05/20	02/06/20	09/06/20	16/06/20	23/06/20	30/06/20	07/07/20	14/07/20	21/07/20	28/07/20	04/08/20	11/08/20	18/08/20	25/08/20	01/09/20	08/09/20	15/09/20	22/09/20	29/09/20	06/10/20	13/10/20	20/10/20	27/10/20	03/11/20	10/11/20	17/11/20	24/11/20	01/12/20	08/12/20	15/12/20	22/12/20	29/12/20	05/01/21	12/01/21	19/01/21	26/01/21	02/02/21	09/02/21	16/02/21	23/02/21	01/03/21	08/03/21	15/03/21	22/03/21	29/03/21	05/04/21	12/04/21	19/04/21	26/04/21	03/05/21	10/05/21	17/05/21	24/05/21	31/05/21	06/06/21	13/06/21	20/06/21	27/06/21	04/07/21	11/07/21	18/07/21	25/07/21	01/08/21	08/08/21	15/08/21	22/08/21	29/08/21	05/09/21	12/09/21	19/09/21	26/09/21	03/10/21	10/10/21	17/10/21	24/10/21	31/10/21	07/11/21	14/11/21	21/11/21	28/11/21	05/12/21	12/12/21	19/12/21	26/12/21	02/01/22	09/01/22	16/01/22	23/01/22	30/01/22	06/02/22	13/02/22	20/02/22	27/02/22	06/03/22	13/03/22	20/03/22	27/03/22	03/04/22	10/04/22	17/04/22	24/04/22	01/05/22	08/05/22	15/05/22	22/05/22	29/05/22	05/06/22	12/06/22	19/06/22	26/06/22	03/07/22	10/07/22	17/07/22	24/07/22	31/07/22	07/08/22	14/08/22	21/08/22	28/08/22	04/09/22	11/09/22	18/09/22	25/09/22	02/10/22	09/10/22	16/10/22	23/10/22	30/10/22	06/11/22	13/11/22	20/11/22	27/11/22	04/12/22	11/12/22	18/12/22	25/12/22	01/01/23	08/01/23	15/01/23	22/01/23	29/01/23	05/02/23	12/02/23	19/02/23	26/02/23	05/03/23	12/03/23	19/03/23	26/03/23	02/04/23	09/04/23	16/04/23	23/04/23	30/04/23	07/05/23	14/05/23	21/05/23	28/05/23	04/06/23	11/06/23	18/06/23	25/06/23	02/07/23	09/07/23	16/07/23	23/07/23	30/07/23	06/08/23	13/08/23	20/08/23	27/08/23	03/09/23	10/09/23	17/09/23	24/09/23	01/10/23	08/10/23	15/10/23	22/10/23	29/10/23	05/11/23	12/11/23	19/11/23	26/11/23	03/12/23	10/12/23	17/12/23	24/12/23	31/12/23	07/01/24	14/01/24	21/01/24	28/01/24	04/02/24	11/02/24	18/02/24	25/02/24	03/03/24	10/03/24	17/03/24	24/03/24	31/03/24	07/04/24	14/04/24	21/04/24	28/04/24	05/05/24	12/05/24	19/05/24	26/05/24	02/06/24	09/06/24	16/06/24	23/06/24	30/06/24	07/07/24	14/07/24	21/07/24	28/07/24	04/08/24	11/08/24	18/08/24	25/08/24	01/09/24	08/09/24	15/09/24	22/09/24	29/09/24	06/10/24	13/10/24	20/10/24	27/10/24	03/11/24	10/11/24	17/11/24	24/11/24	01/12/24	08/12/24	15/12/24	22/12/24	29/12/24	05/01/25	12/01/25	19/01/25	26/01/25	02/02/25	09/02/25	16/02/25	23/02/25	01/03/25	08/03/25	15/03/25	22/03/25	29/03/25	05/04/25	12/04/25	19/04/25	26/04/25	03/05/25	10/05/25	17/05/25	24/05/25	31/05/25	06/06/25	13/06/25	20/06/25	27/06/25	04/07/25	11/07/25	18/07/25	25/07/25	01/08/25	08/08/25	15/08/25	22/08/25	29/08/25	05/09/25	12/09/25	19/09/25	26/09/25	03/10/25	10/10/25	17/10/25	24/10/25	31/10/25	07/11/25	14/11/25	21/11/25	28/11/25	05/12/25	12/12/25	19/12/25	26/12/25	02/01/26	09/01/26	16/01/26	23/01/26	30/01/26	06/02/26	13/02/26	20/02/26	27/02/26	06/03/26	13/03/26	20/03/26	27/03/26	03/04/26	10/04/26	17/04/26	24/04/26	01/05/26	08/05/26	15/05/26	22/05/26	29/05/26	05/06/26	12/06/26	19/06/26	26/06/26	03/07/26	10/07/26	17/07/26	24/07/26	31/07/26	07/08/26	14/08/26	21/08/26	28/08/26	04/09/26	11/09/26	18/09/26	25/09/26	02/10/26	09/10/26	16/10/26	23/10/26	30/10/26	06/11/26	13/11/26	20/11/26	27/11/26	04/12/26	11/12/26	18/12/26	25/12/26	01/01/27	08/01/27	15/01/27	22/01/27	29/01/27	05/02/27	12/02/27	19/02/27	26/02/27	05/03/27	12/03/27	19/03/27	26/03/27	02/04/27	09/04/27	16/04/27	23/04/27	30/04/27	07/05/27	14/05/27	21/05/27	28/05/27	04/06/27	11/06/27	18/06/27	25/06/27	02/07/27	09/07/27	16/07/27	23/07/27	30/07/27	06/08/27	13/08/27	20/08/27	27/08/27	03/09/27	10/09/27	17/09/27	24/09/27	01/10/27	08/10/27	15/10/27	22/10/27	29/10/27	05/11/27	12/11/27	19/11/27	26/11/27	03/12/27	10/12/27	17/12/27	24/12/27	31/12/27	07/01/28	14/01/28	21/01/28	28/01/28	04/02/28	11/02/28	18/02/28	25/02/28	03/03/28	10/03/28	17/03/28	24/03/28	31/03/28	07/04/28	14/04/28	21/04/28	28/04/28	05/05/28	12/05/28	19/05/28	26/05/28	02/06/28	09/06/28	16/06/28	23/06/28	30/06/28	07/07/28	14/07/28	21/07/28	28/07/28	04/08/28	11/08/28	18/08/28	25/08/28	01/09/28	08/09/28	15/09/28	22/09/28	29/09/28	06/10/28	13/10/28	20/10/28	27/10/28	03/11/28	10/11/28	17/11/28	24/11/28	01/12/28	08/12/28	15/12/28	22/12/28	29/12/28	05/01/29	12/01/29	19/01/29	26/01/29	02/02/29	09/02/29	16/02/29	23/02/29	01/03/29	08/03/29	15/03/29	22/03/29	29/03/29	05/04/29	12/04/29	19/04/29	26/04/29	03/05/29	10/05/29	17/05/29	24/05/29	31/05/29	06/06/29	13/06/29	20/06/29	27/06/29	04/07/29	11/07/29	18/07/29	25/07/29	01/08/29	08/08/29	15/08/29	22/08/29	29/08/29	05/09/29	12/09/29	19/09/29	26/09/29	03/10/29	10/10/29	17/10/29	24/10/29	31/10/29	07/11/29	14/11/29	21/11/29	28/11/29	05/12/29	12/12/29	19/12/29	26/12/29	02/01/30	09/01/30	16/01/30	23/01/30	30/01/30	06/02/30	13/02/30	20/02/30	27/02/30	06/03/30	13/03/30	20/03/30	27/03/30	03/04/30	10/04/30	17/04/30	24/04/30	01/05/30	08/05/30	15/05/30	22/05/30	29/05/30	05/06/30	12/06/30	19/06/30	26/06/30	03/07/30	10/07/30	17/07/30	24/07/30	31/07/30	07/08/30	14/08/30	21/08/30	28/08/30	04/09/30	11/09/30	18/09/30	25/09/30	02/10/30	09/10/30	16/10/30	23/10/30	30/10/30	06/11/30	13/11/30	20/11/30	27/11/30	04/12/30	11/12/30	18/12/30	25/12/30	01/01/31	08/01/31	15/01/31	22/01/31	29/01/31	05/02/31	12/02/31	19/02/31	26/02/31	05/03/31	12/03/31	19/03/31	26/03/31	02/04/31	09/04/31	16/04/31	23/04/31	30/04/31	07/05/31	14/05/31	21/05/31	28/05/31	04/06/31	11/06/31	18/06/31	25/06/31	02/07/31	09/07/31	16/07/31	23/07/31	30/07/31	06/08/31	13/08/31	20/08/31	27/08/31	03/09/31	10/09/31	17/09/31	24/09/31	01/10/31	08/10/31	15/10/31	22/10/31	29/10/31	05/11/31	12/11/31	19/11/31	26/11/31	03/12/31	10/12/31	17/12/31	24/12/31	31/12/31	07/01/32	14/01/32	21/01/32	28/01/32	04/02/32	11/02/32	18/02/32	25/02/32	03/03/32	10/03/32	17/03/32	24/03/32	31/03/32	07/04/32	14/04/32	21/04/32	28/04/32	05/05/32	12/05/32	19/05/32	26/05/32	02/06/32	09/06/32	16/06/32	23/06/32	30/06/32	07/07/32	14/07/32	21/07/32	28/07/32	04/08/32	11/08/32	18/08/32	25/08/32	01/09/32	08/09/32	15/09/32	22/09/32	29/09/32	06/10/32	13/10/32	20/10/32	27/10/32	03/11/32	10/11/32	17/11/32	24/11/32	01/12/32	08/12/32	15/12/32	22
---------	----------	------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----



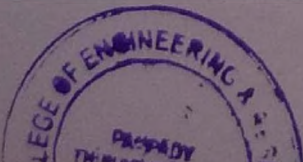




COURSE NAME: EMBEDDED SYSTEM PROGRAMMING & INTERFACING (2016-17)

TOTAL MARKS (30)

1. Which of the following is a coprocessor of 80386? a) 80387 b) 8087 c) 8089 d) 8088
2. Name the processor which helps in floating point calculations. a) microprocessor b) microcontroller c) coprocessor d) controller
3. Which is the coprocessor of 8086? a) 8087 b) 8088 c) 8086 d) 8080
4. Which of the following is a coprocessor of Motorola 68000 family? a) 68001 b) 68011 c) 68881 d) 68010
5. Which of the following processors can perform exponential, logarithmic and trigonometric functions? a) 8086 b) 8087 c) 8080 d) 8088
6. How many stack registers does an 8087 have? a) 4 b) 8 c) 16 d) 32
7. Which of the following processors can handle infinity values? a) 8080 b) 8086 c) 8087 d) 8088
8. Which coprocessor supports affine closure? a) 80187 b) 80287 c) 80387
9. Which one is the floating point coprocessor of 80286? a) 8087 b) 80187 c) 80287
10. How many pins does 8087 have? a) 40 pin DIP b) 20 pin DIP c) 40 pins d) 20 pins
11. What is the clock frequency of 8087? a) 10 MHz b) 5 MHz c) 6 MHz d) 4 MHz
12. How are negative numbers stored in a coprocessor? a) 1's complement b) 2's complement c) decimal d) gray
13. How many bits are used for storing signed integers? a) 2 b) 4 c) 8
14. Which of the processors has an internal coprocessor? a) 8087 b) 80287 c) 80387
15. What are the two major sections in a coprocessor? a) control unit and numeric control unit b) integer unit and control unit c) floating point unit and coprocessor unit d) coprocessor unit and numeric control unit



PRINCIPAL  
Nehru College of



NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)

(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)



16. What is 80/20 rule? a) 80% instruction is generated and 20% instruction is executed b) 80% instruction is executed and 20% instruction is generated c) 80% instruction is executed and 20% instruction is not executed d) 80% instruction is generated and 20% instructions are not generated

17. Which of the architecture is more complex?

a) SPARC b) MC68030 c) MC68030 d) 8086

18. Which is the first company who defined RISC architecture? a) Intel b) IBM c) Motorola d) MIPS

19. Which of the following processors execute its instruction in a single cycle? a) 8086 b) 8088 c) 8087 d) MIPS R2000

20. How is memory accessed in RISC architecture? a) load and store instruction b) opcode instruction c) memory instruction d) bus instruction.

21. Which of the following has a Harvard architecture? a) EDSAC b) SSEM c) PIC d) CSIRAC

22. Which of the following statements are true for von Neumann architecture? a) shared bus between the program memory and data memory b) separate bus between the program memory and data memory c) external bus for program memory and data memory d) external bus for data memory only

23. What is CAM stands for? a) content-addressable memory b) complex addressable memory c) computing addressable memory d) concurrently addressable memory

24. Which of the following processors uses Harvard architecture? a) TEXAS TMS320 b) 80386 c) 80286

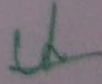
25. Which company further developed the study of RISC architecture?

a) Intel b) Motorola c) university of Berkeley d) MIPS

26. The internal RAM memory of the 8051 is:

- A. 32 bytes
- B. 64 bytes
- C. 128 bytes
- D. 256 bytes



  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Panampady, Thiruvananthapuram, Kerala  
Ph. 944757 4444



27.

The 8051 has \_\_\_\_\_ 16-bit counter/timers.

- A.1
- B.2
- C.3
- D.4

28. The 8051 can handle \_\_\_\_\_ interrupt sources.

- A.3
- B.4
- C.5
- D.6

29 .MOV A, @ R1 will:

- A.copy R1 to the accumulator
- B.copy the accumulator to R1
- C.copy the contents of memory whose address is in R1 to the accumulator
- D.copy the accumulator to the contents of memory whose address is in R1

30.

Device pins XTAL1 and XTAL2 for the 8051 are used for connections to an external oscillator or crystal.

- A.True
- B.False

HOD

PRINCIPAL



PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady Thruvankulam, Thrissur Dt.  
Pin - 680 892 Kerala




**NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE**  
**(NAAC Accredited)**  
(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)




**ANSWER KEY:- EMBEDDED C PROGRAMMING AND INTERFACING (2016-17)**

- 1)b 2)c 3)a 4)b 5)a 6)b 7)c 8)d 9)b 10)a  
11)c 12)a 13)b 14)d 15)a 16)b 17)c 18)b 19)c 20)a  
21)b 22)c 23)d 24)a 25)b 26)c 27)a 28)b 29)b 30)c

HOD 



PRINCIPAL

PRINCIPAL   
Nehru College of  
Engineering and Research Centre  
Pamamaly, Thiruvananthapuram, Kerala  
Pin - 686 557 Kerala



NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)  
(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)



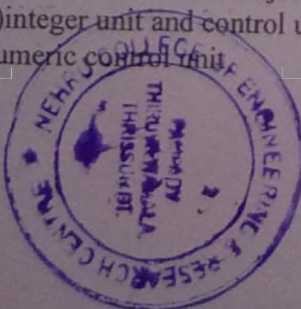
NCANGCC053  
HANO A1

COURSE NAME: EMBEDDED SYSTEM PROGRAMMING & INTERFACING (2016-17)

TOTAL MARKS (30)

28/30

1. Which of the following is a coprocessor of 80386? a) 80387 b) 8087 c) 8089 d) 8088
2. Name the processor which helps in floating point calculations. a) microprocessor b) microcontroller c) coprocessor d) controller
3. Which is the coprocessor of 8086? a) 8087 b) 8088 c) 8086 d) 8080
4. Which of the following is a coprocessor of Motorola 68000 family? a) 68001 b) 68011 c) 68881 d) 68010
5. Which of the following processors can perform exponential, logarithmic and trigonometric functions? a) 8086 b) 8087 c) 8080 d) 8088
6. How many stack register does an 8087 have? a) 4 b) 8 c) 16 d) 32
7. Which of the following processor can handle infinity values? a) 8080 b) 8086 c) 8087 d) 8088.
8. Which coprocessor supports affine closure? a) 80187 b) 80287 c) 80387
9. Which one is the floating point coprocessor of 80286? a) 8087 b) 80187 c) 80287
10. How many pins does 8087 have? a) 40 pin DIP b) 20 pin DIP c) 40 pins d) 20 pins
11. What is the clock frequency of 8087? a) 10 MHz b) 5 MHz c) 6 MHz d) 4 MHz
12. How are negative numbers stored in a coprocessor? a) 1's complement b) 2's complement c) decimal d) gray
13. How many bits are used for storing signed integers? a) 2 b) 4 c) 8
14. Which of the processor has an internal coprocessor? a) 8087 b) 80287 c) 80387.
15. What are the two major sections in a coprocessor? a) control unit and numeric control unit b) integer unit and control unit c) floating point unit and coprocessor unit d) coprocessor unit and numeric control unit



PRINCIPAL

Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala Thrissur  
Pin - 680 597 Kerala



**NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE**  
(NAAC Accredited)

(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)



16. What is 80/20 rule? a) 80% instruction is generated and 20% instruction is executed b) 80% instruction is executed and 20% instruction is generated c) 80% instruction is executed and 20% instruction is not executed d) 80% instruction is generated and 20% instructions are not generated

17. Which of the architecture is more complex?

a) SPARC b) MC68030 c) MC68030d) 8086

18. Which is the first company who defined RISC architecture? a) Intel b) IBM c) Motorola d) MIPS

19. Which of the following processors execute its instruction in a single cycle? a) 8086 b) 8088 c) 8087 d) MIPS R2000

20. How is memory accessed in RISC architecture? a) load and store instruction b) opcode instruction c) memory instruction d) bus instruction.

21. Which of the following has a Harvard architecture? a) EDSAC b) SSEM c) PIC d) CSIRAC

22. Which of the following statements are true for von Neumann architecture? a) shared bus between the program memory and data memory b) separate bus between the program memory and data memory c) external bus for program memory and data memory d) external bus for data memory only

23. What is CAM stands for? a) content-addressable memory b) complex addressable memory c) computing addressable memory d) concurrently addressable memory

24. Which of the following processors uses Harvard architecture? a) TEXAS TMS320 b) 80386 c) 80286

25. Which company further developed the study of RISC architecture?

a) Intel b) Motorola c) university of Berkeley d) MIPS

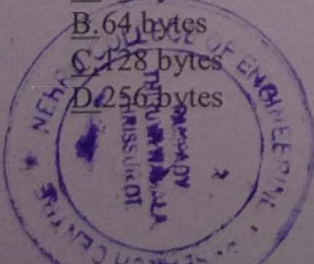
26. The internal RAM memory of the 8051 is:


A. 32 bytes

B. 64 bytes

C. 128 bytes

D. 256 bytes



  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre



NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)  
(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)



27.

The 8051 has \_\_\_\_\_ 16-bit counter/timers.

- A.1
- B.2
- C.3
- D.4

28. The 8051 can handle \_\_\_\_\_ interrupt sources.

- A.3
- B.4
- C.5
- D.6

29 .MOV A, @ R1 will:

- A.copy R1 to the accumulator
- B.copy the accumulator to R1
- C.copy the contents of memory whose address is in R1 to the accumulator
- D.copy the accumulator to the contents of memory whose address is in R1

30.

Device pins XTAL1 and XTAL2 for the 8051 are used for connections to an external oscillator or crystal.

- A.True
- B.False

HOD



PRINCIPAL

PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala, Thiruvananthapuram  
Pin - 680 597 Kerala

NCA NECC 113  
SAND B



NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)

(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)



COURSE NAME: EMBEDDED SYSTEM PROGRAMMING & INTERFACING (2016-17)

TOTAL MARKS (30)

23/30

1. Which of the following is a coprocessor of 80386? a) 80387 b) 8087 c) 8089 d) 8088
2. Name the processor which helps in floating point calculations. a) microprocessor b) microcontroller c) coprocessor d) controller
3. Which is the coprocessor of 8086? a) 8087 b) 8088 c) 8086 d) 8080
4. Which of the following is a coprocessor of Motorola 68000 family? a) 68001 b) 68011 c) 68881 d) 68010
5. Which of the following processors can perform exponential, logarithmic and trigonometric functions? a) 8086 b) 8087 c) 8080 d) 8088
6. How many stack registers does an 8087 have? a) 4 b) 8 c) 16 d) 32
7. Which of the following processor can handle infinity values? a) 8080 b) 8086 c) 8087 d) 8088
8. Which coprocessor supports affine closure? a) 80187 b) 80287 c) 80387
9. Which one is the floating point coprocessor of 80286? a) 8087 b) 80187 c) 80287
10. How many pins does 8087 have? a) 40 pin DIP b) 20 pin DIP c) 40 pins d) 20 pins
11. What is the clock frequency of 8087? a) 10 MHz b) 5 MHz c) 6 MHz d) 4 MHz
12. How are negative numbers stored in a coprocessor? a) 1's complement b) 2's complement c) decimal d) gray
13. How many bits are used for storing signed integers? a) 2 b) 4 c) 8
14. Which of the processor has an internal coprocessor? a) 8087 b) 80287 c) 80387
15. What are the two major sections in a coprocessor? a) control unit and numeric control unit b) integer unit and control unit c) floating point unit and coprocessor unit d) coprocessor unit and numeric control unit



PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thrissur, Kerala

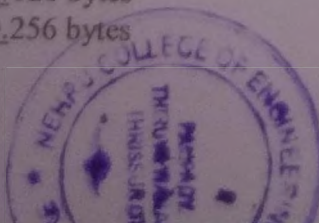



NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)

(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)



16. What is 80/20 rule? a) 80% instruction is generated and 20% instruction is executed b) 80% instruction is executed and 20% instruction is generated c) 80% instruction is executed and 20% instruction is not executed d) 80% instruction is generated and 20% instructions are not generated
17. Which of the architecture is more complex?  
a) SPARC b) MC68030 c) MC68030d) 8086
18. Which is the first company who defined RISC architecture? a) Intel b) IBM c) Motorola d) MIPS
19. Which of the following processors execute its instruction in a single cycle? a) 8086 b) 8088 c) 8087 d) MIPS R2000
20. How is memory accessed in RISC architecture? a) load and store instruction b) opcode instruction c) memory instruction d) bus instruction.
21. Which of the following has a Harvard architecture? a) EDSAC b) SSEM c) PIC d) CSIRAC
22. Which of the following statements are true for von Neumann architecture? a) shared bus between the program memory and data memory b) separate bus between the program memory and data memory c) external bus for program memory and data memory d) external bus for data memory only
23. What is CAM stands for? a) content-addressable memory b) complex addressable memory c) computing addressable memory d) concurrently addressable memory
24. Which of the following processors uses Harvard architecture? a) TEXAS TMS320 b) 80386 c) 80286
25. Which company further developed the study of RISC architecture?  
a) Intel b) Motorola c) university of Berkeley d) MIPS
26. The internal RAM memory of the 8051 is:  
A. 32 bytes  
B. 64 bytes  
C. 128 bytes  
D. 256 bytes



  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre



NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)  
(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)



27.

The 8051 has \_\_\_\_\_ 16-bit counter/timers.

- A.1
- B.2
- C.3
- D.4

28. The 8051 can handle \_\_\_\_\_ interrupt sources.

- A.3
- B.4
- C.5
- D.6

29 .MOV A, @R1 will:

- A.copy R1 to the accumulator
- B.copy the accumulator to R1
- C.copy the contents of memory whose address is in R1 to the accumulator
- D.copy the accumulator to the contents of memory whose address is in R1

30.


Device pins XTAL1 and XTAL2 for the 8051 are used for connections to an external oscillator or crystal.

- A.True
- B.False



HOD

PRINCIPAL

PRINCIPAL   
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala, Thirussur  
Pin 686 597 Kerala

NCA NEEC026  
Nehru, D.



**NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE**  
(NAAC Accredited)  
(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)

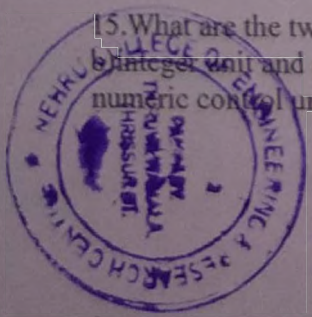


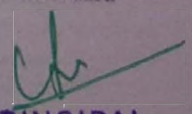
COURSE NAME: EMBEDDED SYSTEM PROGRAMMING & INTERFACING (2016-17)

TOTAL MARKS (30)

27/30

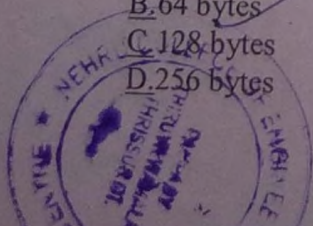
1. Which of the following is a coprocessor of 80386? a) 80387 b) 8087 c) 8089 d) 8088
2. Name the processor which helps in floating point calculations. a) microprocessor b) microcontroller c) coprocessor d) controller
3. Which is the coprocessor of 8086? a) 8087 b) 8088 c) 8086 d) 8080
4. Which of the following is a coprocessor of Motorola 68000 family? a) 68001 b) 68011 c) 68881 d) 68010
5. Which of the following processors can perform exponential, logarithmic and trigonometric functions? a) 8086 b) 8087 c) 8080 d) 8088
6. How many stack registers does an 8087 have? a) 4 b) 8 c) 16 d) 32
7. Which of the following processor can handle infinity values? a) 8080 b) 8086 c) 8087 d) 8088
8. Which coprocessor supports affine closure? a) 80187 b) 80287 c) 80387
9. Which one is the floating point coprocessor of 80286? a) 8087 b) 80187 c) 80287
10. How many pins does 8087 have? a) 40 pin DIP b) 20 pin DIP c) 40 pins d) 20 pins
11. What is the clock frequency of 8087? a) 10 MHz b) 5 MHz c) 6 MHz d) 4 MHz
12. How are negative numbers stored in a coprocessor? a) 1's complement b) 2's complement c) decimal d) gray
13. How many bits are used for storing signed integers? a) 2 b) 4 c) 8
14. Which of the processor has an internal coprocessor? a) 8087 b) 80287 c) 80387
15. What are the two major sections in a coprocessor? a) control unit and numeric control unit b) integer unit and control unit c) floating point unit and coprocessor unit d) coprocessor unit and numeric control unit



  
**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Panampilly Thiruvilwamala, Thiruvananthapuram Dt.  
Pin 686 597 Kerala



16. What is 80/20 rule? a) 80% instruction is generated and 20% instruction is executed b) 80% instruction is executed and 20% instruction is generated c) 80% instruction is executed and 20% instruction is not executed d) 80% instruction is generated and 20% instructions are not generated
17. Which of the architecture is more complex?  
a) SPARC b) MC68030 c) MC68030 d) 8086
18. Which is the first company who defined RISC architecture? a) Intel b) IBM c) Motorola d) MIPS
19. Which of the following processors execute its instruction in a single cycle? a) 8086 b) 8088 c) 8087 d) MIPS R2000
20. How is memory accessed in RISC architecture? a) load and store instruction b) opcode instruction c) memory instruction d) bus instruction.
21. Which of the following has a Harvard architecture? a) EDSAC b) SSEM c) PIC d) CSIRAC
22. Which of the following statements are true for von Neumann architecture? a) shared bus between the program memory and data memory b) separate bus between the program memory and data memory c) external bus for program memory and data memory d) external bus for data memory only
23. What is CAM stands for? a) content-addressable memory b) complex-addressable memory c) computing addressable memory d) concurrently addressable memory
24. Which of the following processors uses Harvard architecture? a) TEXAS TMS320 b) 80386 c) 80286
25. Which company further developed the study of RISC architecture?  
a) Intel b) Motorola c) university of Berkeley d) MIPS
26. The internal RAM memory of the 8051 is:  
A. 32 bytes  
B. 64 bytes  
C. 128 bytes  
D. 256 bytes



*Handwritten signature*

PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala, Thirissur Dist.  
Pin 680 597 Kerala



NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)  
(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)



27.

The 8051 has \_\_\_\_\_ 16-bit counter/timers.

- A.1
- B.2
- C.3
- D.4

28. The 8051 can handle \_\_\_\_\_ interrupt sources.

- A.3
- B.4
- C.5
- D.6

29. MOV A, @ R1 will:

- A. copy R1 to the accumulator
- B. copy the accumulator to R1
- C. copy the contents of memory whose address is in R1 to the accumulator
- D. copy the accumulator to the contents of memory whose address is in R1

30.

Device pins XTAL1 and XTAL2 for the 8051 are used for connections to an external oscillator or crystal.

- A. True
- B. False

HOD



PRINCIPAL

PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pattodey Thiruvilwamala, Thrissur  
Pin 688 597 Kerala







NEHRU COLLEGE OF ENGINEERING  
AND RESEARCH CENTRE



*Certificate of Recognition*

This certificate is awarded to

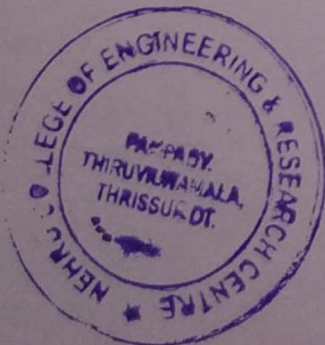
SREELAKSHMI D (NCEIIC072)

for completing Addon course on EMBEDDED C PROGRAMMING  
from 10/1/16 to 10/3/16 conducted by ECE  
Dept NCERC, Pampady

COURSE COODINATOR

HOD

PRINCIPAL  
NCERC



PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thrissur @  
Pin 680 597 Kerala



NEHRU COLLEGE OF ENGINEERING  
AND RESEARCH CENTRE



*Certificate of Recognition*

This certificate is awarded to

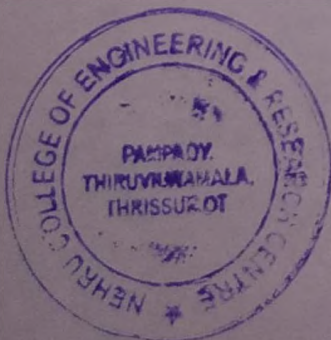
NCEIS ECODE (ALWARVA VIJAYAN)

for completing Addon course on EMBEDDED INTERFACING & PROGRAMMING  
from 10/1/16 to 10/3/16 conducted by ECE  
Dept NCERC, Pampady

COURSE COODINATOR

HOD

PRINCIPAL  
NCERC



PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thrissur, Kerala  
Pin - 680 597 Kerala



NEHRU COLLEGE OF ENGINEERING  
AND RESEARCH CENTRE



*Certificate of Recognition*

This certificate is awarded to

SUTHA PR (NCEIS EC076)

for completing Addon course on EMBEDDED C PROGRAMMING  
from 10/1/16 to 10/1/16 conducted by ECE  
Dept NCEEC, Pampady

COURSE COORDINATOR

NOD

PRINCIPAL

No. ECE



PRINCIPAL

Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvithamala, Thrissur Dt  
Pin - 688 587 Kerala



NEHRU COLLEGE OF ENGINEERING  
AND RESEARCH CENTRE



*Certificate of Recognition*

This certificate is awarded to

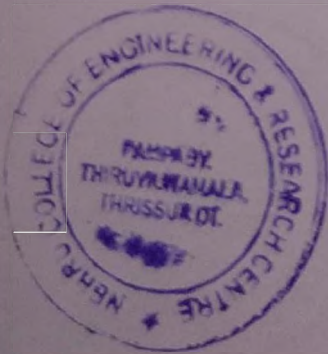
NITHISHA P (NCEISEC054)

for completing Addon course on EMBEDDED C PROGRAMMING  
from 12/1/16 to 12/3/16 conducted by ECE  
Dept NCERC, Pampady

COURSE COODINATOR

HOD

PRINCIPAL  
NCERC



PRINCIPAL

Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala, Thrissur Dt  
Pin. 680 597 Kerala



NEHRU COLLEGE OF ENGINEERING  
AND RESEARCH CENTRE



*Certificate of Recognition*

This certificate is awarded to

SANILA K (NCEURC06)

for completing Addon course on EMBEDDED C PROGRAMMING  
from 10/1/16 to 10/3/16 conducted by ECE  
Dept NCERC, Pampady

*[Signature]*

COURSE COODINATOR

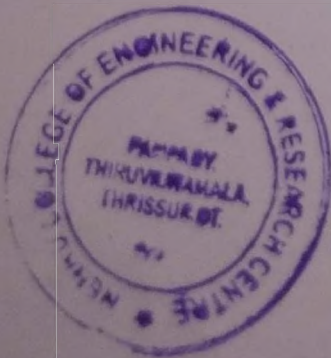
*[Signature]*

HOD

*[Signature]*

PRINCIPAL

NCERC



*[Signature]*

PRINCIPAL

Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thrissur Dt.  
Pin - 687 801, Kerala



**NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
(NAAC Accredited)**

(Approved by AICTE, Affiliated to APJ Abdul Kalam Technological University, Kerala)



# **Master of Computer Applications**

# Nehru College Of Engineering & Research Centre, Pampady

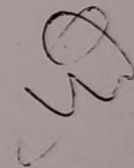
Department of MCA

Circular

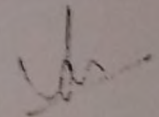
This is to inform you that the Department of MCA is conducting value added course on R Programming from 07/11/16 to 18/11/16. Attendance is compulsory.

Pampady

28/10/16



HOD MCA



PRINCIPAL  
Nehru College of  
Engineering and Research Cent  
Pampady, Thrivandramala, Thrissur  
Pin - 686 597 Kerala

NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE


DEPARTMENT OF MCA


Minutes of Meeting conducted on 01/11/2016


1. Principal's approval dt. 7<sup>th</sup> – 18<sup>th</sup> November 2016 for Value Added courses
2. Topic of VA Course is fixed as R Programming
3. The syllabus may cover Visualizing Data, Probability Distributions, Test of Hypotheses and their applications
4. Class tutors must motivate the students to take the course seriously
5. Evaluation may be done through Quiz, Written Exams and Group activities
6. Certificates for successful students may be provided

Coordinator – VA Courses-MCA

Faculty Attendees

Dr.Sudheer.S.Marar 

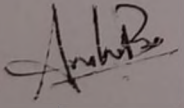
Pramod K 

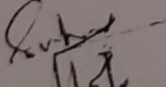
Ashish L 

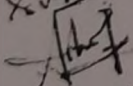


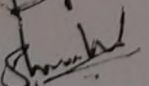
Student Attendees

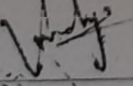
Vishal 

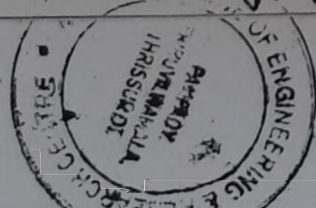
Nair Anisha Balakrishnan 

Subair A S 

Asha Jhony 

Shivin Wilson 

Vindhuja 



PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala, Thrissur Dt  
Pin 680 597 Kerala

# Nehru College Of Engineering & Research Centre, Pampady

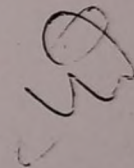
Department of MCA

Circular

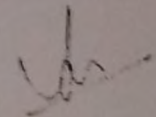
This is to inform you that the Department of MCA is conducting value added course on R Programming from 07/11/16 to 18/11/16. Attendance is compulsory.

Pampady

28/10/16



HOD MCA



PRINCIPAL  
Nehru College of  
Engineering and Research Cent  
Pampady, Thrissur  
Pin - 686 597 Kerala

# NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE

## DEPARTMENT OF MCA

### SYLLABUS OF R PROGRAMMING

#### Visualizing Data

Tables, charts and plots. Visualising Measures of Central Tendency, Variation, and Shape. Box plots, Pareto diagrams. How to find the mean median standard deviation and quantiles of a set of observations.

Students may experiment with real as well as artificial data sets.

#### Probability Distributions.

Set operations, simulation of various properties. Bays' rule. Generate and Visualize Discrete and continuous distributions using the statistical environment. Demonstration of CDF and PDF uniform and normal, binomial Poisson distributions. Students are expected to generate artificial data using the chosen statistical environment and explore various distribution and its properties. Various parameter changes may be studied

#### Random samples.

How to generate random numbers. Study how to select a random sample with replacement from normal and uniform distribution. Students can use the built in functions to explore random sample selection.

Study of binomial distribution. Plots of density and distribution functions. Normal approximation to the Binomial distribution. Central limit theorem

Study of confidence intervals. How to compute confidence intervals for the mean when the standard deviation is known.

How to perform tests of hypotheses about the mean when the variance is known.

How to compute the p-value. Explore the connection between the critical region, the test statistic, and the p-value.

How to find quartiles of the t-distribution. How to perform a significance test for testing the mean of a population with unknown standard deviation.

Compare populations means from two Normal distributions with unknown variance

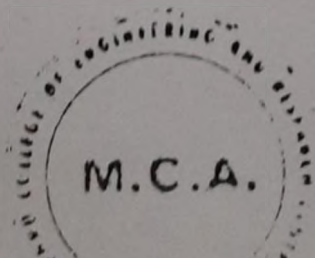
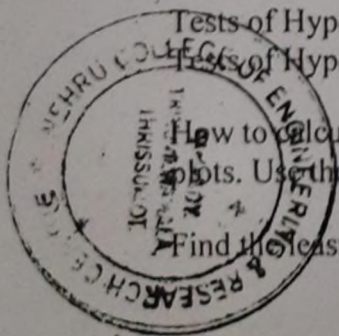
Tests of Hypotheses for One Proportion

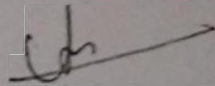
Tests of Hypotheses for Comparing Two Proportions

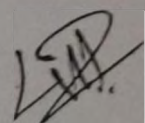
How to calculate the correlation between two variables. How to make scatter

plots. Use the scatterplot to investigate the relationship between two variables

Find the least-squares regression line. How to calculate and plot the residuals



  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Panipady Thiruvilwamala Thiruvananthapuram  
Pin 680 597 Kerala

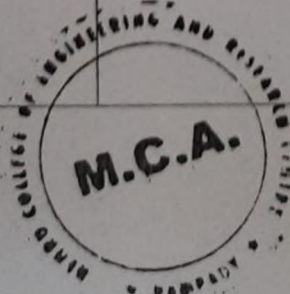


NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE

MCA DEPARTMENT 2016 – 2017

SCHEDULE R PROGRAMMING 7<sup>th</sup> – 18<sup>th</sup> Nov 2016

No	Date	Portions Covered
1	7	Visualizing Data
2	8	Probability Distributions
3	9	Random samples
4	10	Binomial distribution
5	11	Confidence intervals
6	14	Perform tests of hypotheses
7	15	p-value
8	16	t-distribution
9	17	Correlation between two variables
10	18	least-squares regression line



PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvananthapuram - Thiruvananthapuram District  
Pin 680 597 Kerala

*[Handwritten Signature]*

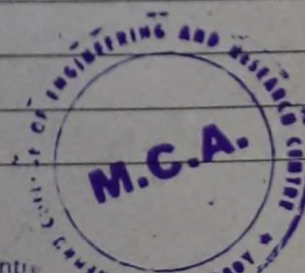
NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE

MCA DEPARTMENT 2016 - 2017

NAME LIST OF STUDENTS

7<sup>th</sup> - 18<sup>th</sup> Nov 2016

NO.	NAME
1	AISWARYA K
2	AISWARYA R
3	AMAL N P
4	ANJU K
5	ANJU S
6	ANNAPOORNI K G
7	ANUMOL ANTONY
8	ASWATHI.V.
9	DIVYA P.
10	GANESH NARAYANAN
11	HIMA S
12	HONEY XAVIER
13	JISHA P J
14	JITHU POUL
15	KEERTHY A R
16	KRISHNA PRIYA. S.
17	KRISHNA SHARMA K
18	LAKSHMIDEVI M V
19	MANSOOR E
20	MANU KRISHNAN K
21	MEERADEVI M
22	NAIR ANISHA BALAKRISHNAN
23	NEERAJ KRISHNAN P
24	NEON K K
25	NIJEESH P R.
26	PREETHI K
27	PRIYANKA RAJ S
28	REVATHY T C
29	SHAMEEMA K P

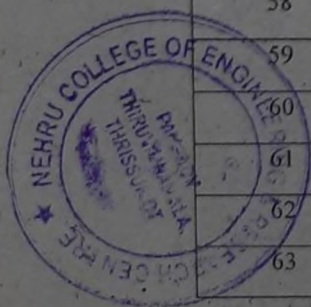


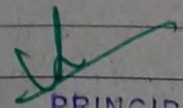
*[Handwritten signature]*

PRINCIPAL  
Nehru College of  
Engineering and Research Centre

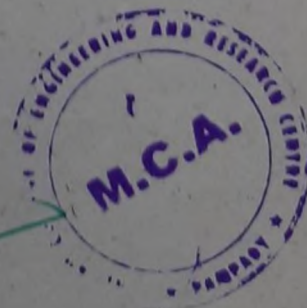
*[Handwritten signature]*

30	SHEEBA A
31	SHILPA RAMESH P
32	SMINUMOL E S
33	SOMYA N
34	SONI K
35	SUDHISHMA T
36	VIBITHA C
37	VISHAL P V
38	AISWARYA K R
39	AJESH A J
40	ASHA JOHNY
41	ASHITHA B Y
42	ATHIRA O M
43	BINDHU BALACHANDRAN
44	DEVI KRISHNA P R
45	DIPIN K S
46	DIVYA K
47	FAYIS K T
48	JAYASREE P
49	JIBIN VARGHESE
50	MOHAMMED RAOFAL
51	NAMITHA P S
52	NANCY KOCHOUSEPH
53	NEELIMA M P
54	NIDHILA K
55	PRESSY MATHEW
56	RAIBY M BENNY
57	SHAMILA M I
58	SHOBIKA KAILAS S
59	SNEHA MOHAN P
60	SREEJITH K
61	SUBAIR A S
62	SUMI M
63	AISWARYA C



  
**PRINCIPAL**  
 Nehru College of  
 Engineering and Research Centre,  
 Pampady Thiruvilwamala, Thiruvananthapuram  
 Pin 680 597 Kerala

64	AISWARYA M A
65	AISWARYA RAJENDRAN V
66	AMUDA K
67	ATHIRA K
68	HARITHA K S
69	JIJIN P
70	KARISHMA K
71	M SUKANYA
72	MEERA N
73	MEHAZA NAJEEB
74	MOHAMED MUSTHAFA P
75	MOUNIKA V
76	RESHMA M
77	RESHMI R
78	SHIVIN WILSON N
79	SHYAM M S
80	SILNA K WILSON
81	SIRIL M R
82	SREELAKSHMI C
83	SREENATH M P
84	SRUTHY M
85	STEPHY SEBASTIAN
86	SUMILA S
87	THANSIHA NASRIN A
88	VINDHUJA V
89	VINI C V



*Handwritten signature in green ink*

PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala

*Handwritten signature in black ink*

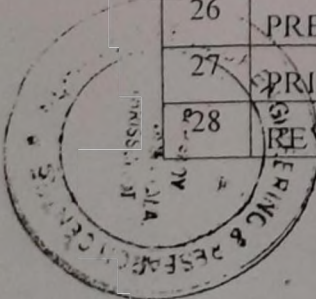
# NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE

MCA DEPARTMENT 2016 - 2017

## ATTENDANCE TEAM A

7<sup>th</sup> - 18<sup>th</sup> Nov 2016

NO.	NAME	7	8	9	10	11	14	15	16	17	18
1	AISWARYA K	/	/	/	/	/	/	/	/	/	/
2	AISWARYA R	/	/	/	/	/	/	/	/	/	/
3	AMAL NP	/	/	/	/	/	/	/	/	/	/
4	ANJU K	/	/	/	/	/	/	/	/	/	/
5	ANJU S	/	/	/	a	/	/	/	/	/	/
6	ANNAPOORNI K G	/	/	/	a	/	/	/	/	/	/
7	ANUMOL ANTONY	/	/	/	/	/	/	/	/	/	/
8	ASWATHI.V.	/	/	/	/	/	/	/	/	/	/
9	DIVYA P	/	/	/	/	/	/	/	/	/	/
10	GANESH NARAYANAN	/	/	/	/	/	/	/	/	/	/
11	HIMA S	/	/	/	/	/	/	/	/	/	/
12	HONEY XAVIER	/	/	/	/	/	/	/	/	/	/
13	JISHA P J	/	/	/	/	/	/	/	/	/	/
14	JITHU POUL	/	/	/	/	/	/	/	/	/	/
15	KEERTHY A R	/	/	/	/	/	/	/	/	/	/
16	KRISHNA PRIYA. S.	/	/	/	/	/	/	/	/	/	/
17	KRISHNA SHARMA K	/	/	/	/	/	/	/	/	/	/
18	LAKSHMIDEVI M V	/	/	/	/	/	/	/	/	/	/
19	MANSOOR E	/	/	/	/	/	/	/	/	/	/
20	MANU KRISHNAN K	/	/	/	/	/	/	/	/	/	/
21	MEERADEVI M	/	/	/	/	/	/	/	/	a	/
22	NAIR ANISHA BALAKRISHNAN	/	/	/	/	/	/	/	/	/	/
23	NEERAJ KRISHNAN P	/	/	/	/	/	/	/	/	/	/
24	NEON K K	/	/	/	/	/	/	/	/	/	/
25	NIJEESH P R	/	/	/	/	/	/	/	/	/	/
26	PREETHI K	/	/	/	/	/	/	/	/	/	/
27	PRIYANKA RAJ S	/	/	/	/	/	/	/	/	/	/
28	REVATHY T C	/	/	/	/	/	/	/	/	/	/



*[Handwritten Signature]*



*[Handwritten Signature]*

*[Handwritten Signature]*

PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Thiruvananthapuram, Thiruvananthapuram  
Pin - 566 497 Kerala

29	SHAMEEMA K P	/	/	/	/	/	/	/	/	/	/
30	SHEEBA A	/	/	/	/	/	a	/	/	/	/
31	SHILPA RAMESH P	/	/	/	/	/	/	a	/	/	/
32	S MINUMOL E S	/	/	/	/	/	/	/	/	/	/
33	SOMYA N	/	/	/	/	/	/	/	/	/	/
34	SONI K	/	/	/	/	/	/	/	/	/	/
35	SUDHISHMA T	/	/	/	/	/	/	/	/	/	/
36	VIBITHA C	/	/	/	/	/	/	/	/	/	/
37	VISHAL P V	/	/	/	/	/	/	/	/	/	/
38	AISWARYA K R	/	/	/	/	/	/	/	/	/	/
39	AJESH A J	/	/	/	/	/	/	/	/	/	/
40	ASHA JOHNY	/	/	/	/	/	a	/	/	/	/
41	ASHITHA B Y	/	/	/	/	/	/	/	/	/	/
42	ATHIRA O M	/	/	/	/	/	/	/	/	/	/
43	BINDHU BALACHANDRAN	/	/	/	/	/	/	/	/	/	/
44	DEVI KRISHNA P R	/	/	/	/	/	/	/	/	/	/
45	DIPIN K S	/	/	/	/	/	/	/	/	/	/



PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Panipady Thirujithamana Thirussur Dt  
Pin 680 997 Kerala

*[Handwritten signature]*

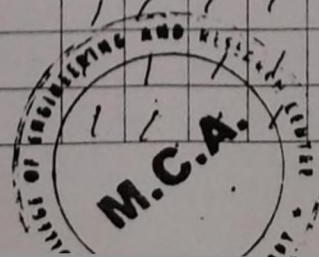
NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE

MCA DEPARTMENT 2016 - 2017

ATTENDANCE TEAM B

7<sup>th</sup> - 18<sup>th</sup> Nov 2016

NO.	NAME	7	8	9	10	11	14	15	16	17	18
1	DIVYA K	/	/	/	/	/	/	/	/	/	/
2	FAYIS K T	a	/	/	/	/	/	/	/	/	/
3	JAYASREE P	/	/	/	/	/	/	/	/	a	/
4	JIBIN VARGHESE	/	/	/	/	/	a	/	/	/	/
5	MOHAMMED RAOFAL	/	/	/	/	/	/	/	/	/	/
6	NAMITHA P S	/	/	/	/	/	/	/	/	/	/
7	NANCY KOCHOUSEPH	/	/	/	/	/	/	/	/	/	/
8	NEELIMA M P	/	/	/	/	/	/	/	/	/	/
9	NIDHILA K	/	/	/	/	/	/	/	/	/	/
10	PRESSY MATHEW	/	/	/	/	/	/	/	/	/	/
11	RAIBY M BENNY	/	/	/	/	/	/	/	/	/	/
12	SHAMILA M I	/	/	/	/	/	/	/	/	/	/
13	SHOBICA KAILAS S	/	/	/	/	/	/	/	/	/	/
14	SNEHA MOHAN P	/	/	/	/	/	/	/	/	/	/
15	SREEJITH K	/	/	/	/	/	/	/	/	/	/
16	SUBAIR A S	/	/	/	/	/	/	/	/	/	/
17	SUMI M	/	/	/	/	/	/	/	/	/	/
18	AISWARYA C	/	/	/	/	/	/	/	/	/	/
19	AISWARYA M A	/	/	/	/	/	/	/	/	/	/
20	AISWARYA RAJENDRAN V	/	/	/	/	/	/	/	/	/	/
21	AMUDA K	/	/	/	/	/	/	/	/	/	/
22	ATHIRA K	/	/	/	/	/	/	/	/	/	/
23	HARITHA K S	/	/	/	/	/	/	/	/	/	/
24	JIJIN P	/	/	/	/	/	/	/	/	/	/
25	KARISHMA K	/	/	/	/	/	/	/	/	/	/
26	M SUKANYA	/	/	/	/	/	/	/	/	/	/
27	MEERA N	/	/	/	/	/	/	/	/	/	/
28	MEHAZA NAJEEB	/	/	/	/	/	/	/	/	/	/
29	MOHAMED MUSTHAFA P	/	/	/	/	/	/	/	/	/	/



PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Thiruvilvamala, Thiruvananthapuram  
Pin - 695 027

30	MOUNIKA V	/	/	/	/	/	/	/	/	/
31	RESHMA M	/	/	/	/	/	/	/	/	/
32	RESHMI R	/	/	/	/	/	/	/	/	/
33	SHIVIN WILSON N	/	a	/	/	/	/	/	/	/
34	SHYAM M S	/	/	/	/	/	/	/	/	/
35	SILNA K WILSON	/	/	/	/	/	/	/	/	/
36	SIRIL M R	/	/	/	/	/	/	/	/	/
37	SREELAKSHMI C	/	/	/	/	/	/	/	/	/
38	SREENATH M P	/	/	/	/	/	/	/	/	/
39	SRUTHY M	/	/	/	/	/	/	/	/	/
40	STEPHY SEBASTIAN	/	/	/	/	/	/	/	/	/
41	SUMILA S	/	/	/	/	/	/	/	/	/
42	THANSIHA NASRIN A	/	/	/	/	/	/	/	/	/
43	VINDHUJA V	/	/	/	/	/	/	/	/	/
44	VINI C V	/	/	/	/	/	/	/	/	/



*Handwritten signature*

PRINCIPAL

Nehru College of  
Engineering and Research Centre  
Pampady, Tamil Nadu, India  
Pin: 626 502, Kerala

*Handwritten initials*

NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE

DEPARTMENT OF MCA

R Programming Question Paper

Each question carries 1 mark

Question Context 1

Consider the following function.

```
f <- function(x) {  
  g <- function(y) {  
    y + z  
  }  
  z <- 4  
  x + g(x)  
}
```

1) If we execute following commands (written below), what will be the output?

```
z <- 10
```

```
f(4)
```

- A) 12
- B) 7
- C) 4
- D) 16

Question context 2

The iris dataset has different species of flowers such as Setosa, Versicolor and Virginica with their sepal length. Now, we want to understand the distribution of sepal length across all the species of flowers. One way to do this is to visualise this relation through the graph shown below.

2) Which function can be used to produce the graph shown above?

- A) xyplot()
- B) stripplot()
- C) barchart()
- D) bwplot()



Question Context 3

Alpha	125.5	0
Beta	235.6	1
Beta	212.03	0
Beta	211.30	0
Alpha	265.46	1

File Name – Dataframe.csv

PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thiruvananthapuram Dt  
Pin 680 597 Kerala

3) Which of the following commands will correctly read the above csv file with 5 rows in a dataframe?

- A) csv('Dataframe.csv')
- B) csv('Dataframe.csv',header=TRUE)
- C) dataframe('Dataframe.csv')
- D) csv2('Dataframe.csv',header=FALSE,sep=',')

Question Context 4

Excel file format is one of the most common formats used to store datasets. It is important to know how to import an excel file into R. Below is an excel file in which data has been entered in the third sheet.

Alpha	125.5	0
Beta	235.6	1
Beta	212.03	0
Beta	211.30	0
Alpha	265.46	1

File Name - Dataframe.xlsx

4) Which of the following codes will read the above data in the third sheet into a dataframe in R?

- A) Openxlsx::read.xlsx("Dataframe.xlsx",sheet=3,colNames=FALSE)
- B) Xlsx::read.xlsx("Dataframe.xlsx",sheetIndex=3,header=FALSE)
- C) XLConnect::readWorksheetFromFile("Dataframe.xlsx",sheet=3,header=FALSE)
- D) All of the above

Question Context 5

A	10	Sam
B	20	Peter
C	30	Harry
D	!	?
	50	Mark

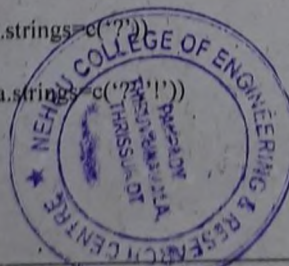
File Name - Dataframe.csv

5) Missing values in this csv file has been represented by an exclamation mark ("!") and a question mark ("?"). Which of the codes below will read the above csv file correctly into R?

- A) csv('Dataframe.csv')
- B) csv('Dataframe.csv',header=FALSE, sep=',',na.strings=c('?','!'))
- C) csv2('Dataframe.csv',header=FALSE,sep=',',na.strings=c('?','!'))
- D) dataframe('Dataframe.csv')

Question Context 6-7

	Column 1	Column 2	Column 3
Row 1	15.5	14.12	69.5
Row 2	18.6	56.23	52.4
Row 3	21.4	47.02	63.21
Row 4	36.1	56.63	36.12



PRINCIPAL  
Nehru College of

6) The above csv file has row names as well as column names. Which of the following code will read the above csv file properly into R?

- A) `delim('Train.csv',header=T,sep=',',row.names=TRUE)`
- B) `csv2('Train.csv',header=TRUE, row.names=TRUE)`
- C) `dataframe('Train.csv',header=TRUE,sep=',')`
- D) `csv('Train.csv',header=TRUE,sep=',')`

Question Context 6-7

	Column 1	Column 2	Column 3
Row 1	15.5	14.12	69.5
Row 2	18.6	56.23	52.4
Row 3	21.4	47.02	63.21
Row 4	36.1	56.63	36.12

File Name – Dataframe.csv

7) Which of the following codes will read only the first two rows of the csv file?

- A) `csv('Dataframe.csv',header=TRUE,row.names=1,sep=',',nrows=2)`
- B) `csv2('Dataframe.csv',row.names=1,nrows=2)`
- C) `delim2('Dataframe.csv',header=T,row.names=1,sep=',',nrows=2)`
- D) `dataframe('Dataframe.csv',header=TRUE,row.names=1,sep=',',skip.last=2)`

Question Context 8

Dataframe1

Feature1	Feature2	Feature3	Feature4
A	1000	25.5	10
B	2000	35.5	34
C	3000	45.5	78
D	4000	55.5	3

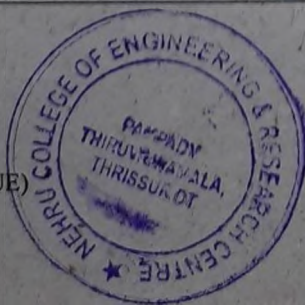
Dataframe2

Feature1	Feature2	Feature3
E	5000	65.5
F	6000	75.5
G	7000	85.5
H	8000	95.5

8) There are two dataframes stored Dataframe1 and Dataframe2 shown above. Which of the following codes will produce the output shown below?

Feature1	Feature2	Feature3
A	1000	25.5
B	2000	35.5
C	3000	45.5
D	4000	55.5
E	5000	65.5
F	6000	75.5
G	7000	85.5
H	8000	95.5

- A) `merge(dataframe[,1:3],dataframe2)`
- B) `merge(dataframe1,dataframe2)[,1:3]`
- C) `merge(dataframe1,dataframe2,all=TRUE)`



**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Pamapady Thiruvilwamala, Thrissur Dt  
Pin 680 597 Kerala

- D) Both 1 and 2
- E) All of the above

Question Context 9

	V1	V2
1	121.5	461
2	516	1351
3	451	6918
4	613	112
5	112.36	230
6	25.23	1456
7	12	457

dataframe

9) A data set has been read in R and stored in a variable "dataframe". Which of the below codes will produce a summary (mean, mode, median) of the entire dataset in a single line of code?

- A) summary(dataframe)
- B) stats(dataframe)
- C) summarize(dataframe)
- D) summarise(dataframe)
- E) None of the above

Question Context 10

A dataset has been read in R and stored in a variable "dataframe". Missing values have been read as NA.

A	10	Sam
B	NA	Peter
C	30	Harry
D	40	NA
E	50	Mark

dataframe

10) Which of the following codes will not give the number of missing values in each column?

- A) colSums(is.na(dataframe))
- B) apply(is.na(dataframe),2,sum)
- C) sapply(dataframe,function(x) sum(is.na(x)))
- D) table(is.na(dataframe))

Question context 11

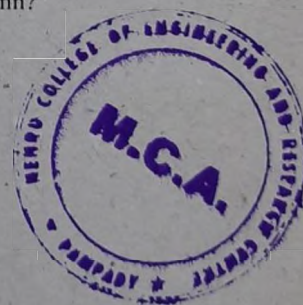
One of the important phase in a Data Analytics pipeline is univariate analysis of the features which includes checking for the missing values and the distribution, etc. Below is a dataset and we wish to plot histogram for "Value" variable.

Parameter	State	Value	Dependents
Alpha	Active	50	2
Beta	Active	45	5
Beta	Passive	25	0

PRINCIPAL

Nehru College of

Engineering and Research Centre  
Pozhuvady, Thiruvithiyamala, Thrissur Dt.



Alpha	Passive	21	0
Alpha	Passive	26	1
Beta	Active	30	2
Beta	Passive	18	0

dataframed

11) Which of the following commands will help us perform that task ?

- A) hist(dataframed\$Value)
- B) ggplot2::qplot(dataframed\$Value,geom="Histogram")
- C) ggplot2::ggplot(data=dataframed,aes(dataframe\$Value))+geom\_histogram()
- D) All of the above

Question Context 12

Parameter	State	Value	Usage
Alpha	Active	50	0
Beta	Active	45	1
Beta	Passive	25	0
Alpha	Passive	21	0
Alpha	Passive	26	1
Beta	Active	30	1
Beta	Passive	18	0

Certain Algorithms like XGBOOST work only with numerical data. In that case, categorical variables present in dataset are first converted to DUMMY variables which represent the presence or absence of a level of a categorical variable in the dataset. For example After creating the Dummy Variable for the feature "Parameter", the dataset looks like below.

Parameter Alpha	Parameter Beta	State	Value	Usage
1	0	Active	50	0
0	1	Active	45	1
0	1	Passive	25	0
1	0	Passive	21	0
1	0	Passive	26	1
0	1	Active	30	1
0	1	Passive	18	0

12) Which of the following commands will help us to achieve this?

- A) dummies:: dummy\_data.frame(dataframe,names=c('Parameter'))
- B) dataframe\$Parameter\_Alpha=0  
dataframe\$Gende\_Beta=0  
dataframe\$Parameter\_Alpha[which(dataframe\$Parameter=='Alpha')]=1  
dataframe\$Parameter\_Beta[which(dataframe\$Parameter=='Alpha')]=0  
dataframe\$Parameter\_Alpha[which(dataframe\$Parameter=='Beta')]=0  
dataframe\$Parameter\_Beta[which(dataframe\$Parameter=='Beta')]=1
- C) contrasts(dataframe\$Parameter)
- D) Both 1 and 2



**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thiruvananthapuram, Kerala  
Pin 680 597 Kerala

Question context 13

	Column1	Column2	Column3	Column4	Column5	Column6
Name1	Alpha	12	24	54	0	Alpha
Name2	Beta	16	32	51	1	Beta
Name3	Alpha	52	104	32	0	Gamma
Name4	Beta	36	72	84	1	Delta
Name5	Beta	45	90	32	0	Phi
Name6	Alpha	12	24	12	0	Zeta
Name7	Beta	32	64	64	1	Sigma
Name8	Alpha	42	84	54	0	Mu
Name9	Alpha	56	112	31	1	Eta

dataframe

13) We wish to calculate the correlation between "Column2" and "Column3" of a "dataframe". Which of the below codes will achieve the purpose?

A) `corr(dataframe$column2,dataframe$column3)`

B) `(cov(dataframe$column2,dataframe$column3))/(var(dataframe$column2)*sd(dataframe$column3))`

C)

`(sum(dataframe$Column2*dataframe$Column3)-  
(sum(dataframe$Column2)*sum(dataframe$Column3)/nrow(dataframe)))/(sqrt((sum(dataframe$Column2*dataframe$Column2)-  
(sum(dataframe$Column2)^3)/nrow(dataframe))* (sum(dataframe$Column3*dataframe$Column3)-  
(sum(dataframe$Column3)^2)/nrow(dataframe))))`

D) None of the Above

Question Context 14

Parameter	State	Value	Dependents
Alpha	Active	50	2
Beta	Active	45	5
Beta	Passive	25	0
Alpha	Passive	21	0
Alpha	Passive	26	1
Beta	Active	30	2
ta	Passive	18	0

dataframe

14) The above dataset has been loaded for you in R in a variable named "dataframe" with first row representing the column name. Which of the following code will select only the rows for which parameter is Alpha?

A) `subset(dataframe, Parameter='Alpha')`

B) `subset(dataframe, Parameter=='Alpha')`

C) `filter(dataframe,Parameter=='Alpha')`

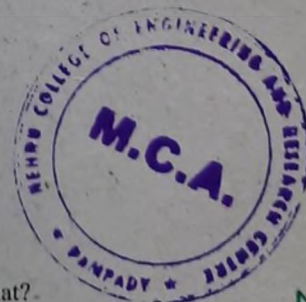
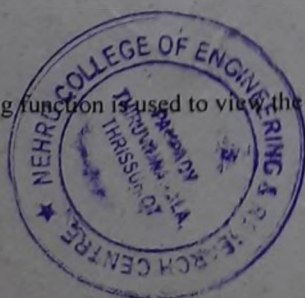
D) Both 2 and 3

E) All of the above

15) Which of the following function is used to view the dataset in spreadsheet like format?

A) `disp()`

B) `View()`



*[Signature]*  
**PRINCIPAL**  
 Nehru College of  
 Engineering and Research Centre  
 Panpady Thiruvilwamala, Thiruvananthapuram Dt  
 Pin 680 597 Kerala

C) seq()

D) All of the Above

Question Context 16

The below dataframe is stored in a variable named data.

A	B
1	Right
2	Wrong
3	Wrong
4	Right
5	Right
6	Wrong
7	Wrong
8	Right

data

16) Suppose B is a categorical variable and we wish to draw a boxplot for every level of the categorical level. Which of the below commands will help us achieve that?

A) `boxplot(A,B,data=data)`

B) `boxplot(A~B,data=data)`

C) `boxplot(A|B,data=data)`

D) None of the above

17) Which of the following commands will split the plotting window into 4 X 3 windows and where the plots enter the window column wise.

A) `par(split=c(4,3))`

B) `par(mfcol=c(4,3))`

C) `par(mfrow=c(4,3))`

D) `par(col=c(4,3))`

Question Context 18

A Dataframe "df" has the following data:

Dates

2017-02-28

2017-02-27

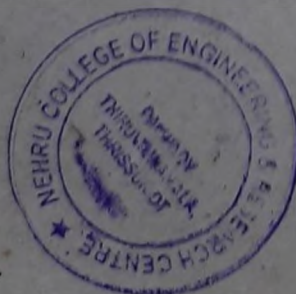
2017-02-26

2017-02-25

2017-02-24

2017-02-23

2017-02-22



  
**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Pamipady Thiruvilwamala, Thiruvananthapuram  
Pin 680 597 Kerala

2017-02-21

After reading above data, we want the following output:

Dates

28 Tuesday Feb 17

27 Monday Feb 17

26 Sunday Feb 17

25 Saturday Feb 17

24 Friday Feb 17

23 Thursday Feb 17

22 Wednesday Feb 17

21 Tuesday Feb 17

18) Which of the following commands will produce the desired output?

A) `format(df,"%d %A %b %y")`

B) `format(df,"%D %A %b %y")`

C) `format(df,"%D %a %B %Y")`

D) None of above

19) Which of the following command will help us to rename the second column in a dataframe named "table" from alpha to beta?

A) `colnames(table)[2]='beta'`

B) `colnames(table)[which(colnames=='alpha')]='beta'`

C) `setnames(table,'alpha','beta')`

D) All of the above

Question Context: 20

A majority of work in R uses systems internal memory and with large datasets, situations may arise when the R workspace cannot hold all the R objects in memory. So removing the unused objects is one of the solution.

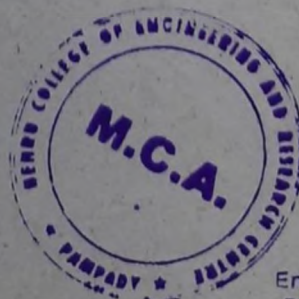
20) Which of the following command will remove an R object / variable named "santa" from the workspace?

A) `remove(santa)`

B) `rm(santa)`

C) Both

D) None



*Handwritten signature*

PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thiruvananthapuram Dt  
Pin - 680 597, Kerala

# NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE

## DEPARTMENT OF MCA

### R Programming

#### Question Context 1

Consider the following function.

```
f <- function(x) {  
  
  g <- function(y) {  
  
    y + z  
  
  }  
  
  z <- 4  
  
  x + g(x)  
  
}
```



1) If we execute following commands (written below), what will be the output?

```
z <- 10
```

- (4)  
A) 12  
B) 7  
C) 4  
D) 16

**Solution: (A)**

Scoping rule of R will cause z<4 to take precedence over z<-10. Hence, g(x) will return a value of 8. Therefore, option A is the correct answer.

#### Question context 2

The iris dataset has different species of flowers such as Setosa, Versicolor and Virginica with their sepal length. Now, we want to understand the distribution of sepal length across all the species of flowers. One way to do this is to visualise this relation through the graph shown below.

2) Which function can be used to produce the graph shown above?

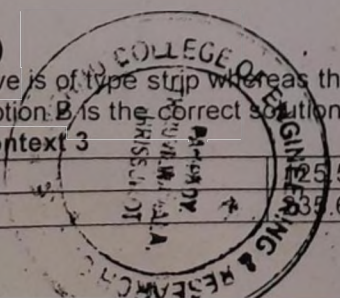
- A) xyplot()  
B) stripplot()  
C) barchart()  
D) bwplot()

**Solution: (B)**

The plot above is of type strip whereas the options a, c and d will produce a scatter, bar and box whisker plot respectively. Therefore, option B is the correct solution.

#### Question Context 3

Alpha	25.5	0
Beta	35.6	1



PRINCIPAL  
Nehru College of  
Engineering and Research Centre

Beta	212.03	0
Beta	211.30	0
Alpha	265.46	1

File Name – Dataframe.csv

3) Which of the following commands will correctly read the above csv file with 5 rows in a dataframe?

- A) csv('Dataframe.csv')
- B) csv('Dataframe.csv', header=TRUE)
- C) dataframe('Dataframe.csv')
- D) csv2('Dataframe.csv', header=FALSE, sep=',')

Solution: (D)

Options 1 and 2 will read the first row of the above dataframe as header. Option 3 doesn't exist. Therefore, option D is the correct solution.

**Question Context 4**

Excel file format is one of the most common formats used to store datasets. It is important to know how to import an excel file into R. Below is an excel file in which data has been entered in the third sheet.

Alpha	125.5	0
Beta	235.6	1
Beta	212.03	0
Beta	211.30	0
Alpha	265.46	1

File Name – Dataframe.xlsx

4) Which of the following codes will read the above data in the third sheet into a dataframe in R?

- A) Openxlsx::read.xlsx("Dataframe.xlsx", sheet=3, colNames=FALSE)
- B) Xlsx::read.xlsx("Dataframe.xlsx", sheetIndex=3, header=FALSE)
- C) XLConnect::readWorksheetFromFile("Dataframe.xlsx", sheet=3, header=FALSE)
- D) All of the above

Solution: (D)

All of the above options are true, as they give out different methods to read an excel file into R and reads the above file correctly. Therefore, option D is the correct solution.

**Question Context 5**

A	10	Sam
B	20	Peter
C	30	Harry
D	!	?
E	50	Mark

File Name – Dataframe.csv

5) Missing values in this csv file has been represented by an exclamation mark ("!") and a question mark ("?"). Which of the codes below will read the above csv file correctly into R?

- A) csv('Dataframe.csv')
- B) csv('Dataframe.csv', header=FALSE, sep=',', na.strings=c('?'))
- C) csv2('Dataframe.csv', header=FALSE, sep=',', na.strings=c('!', '?'))
- D) dataframe('Dataframe.csv')

Solution: (C)

Option A will not be able to read "?" and "!" as NA in R. option B will be able to read only "?" as NA but not "!". Option 4 doesn't exist. Therefore, option C is the correct solution.

**Question Context 6-7**

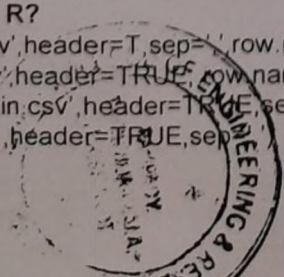
	Column 1	Column 2	Column 3
Row 1	15.5	14.12	69.5
Row 2	18.6	56.23	52.4
Row 3	21.4	47.02	63.21
Row 4	36.1	56.63	36.12

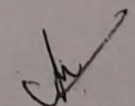
File Name – Dataframe.csv

6) The above csv file has row names as well as column names. Which of the following code will read the above csv file properly into R?

- A) delim('Train.csv', header=T, sep=',', row.names=TRUE)
- B) csv2('Train.csv', header=TRUE, row.names=TRUE)
- C) dataframe('Train.csv', header=TRUE, sep=',')
- D) csv('Train.csv', header=TRUE, sep=',')

Solution: (D)



  
**PRINCIPAL**  
 Nehru College of  
 Engineering and Research Centre  
 Pampady Thiruvilvamalai, Pin 680 597, Kerala

row.names argument in options A and B takes only the vector containing the actual row names or a single number giving the column of the table which contains the row names and not a logical value. Option C doesn't exist. Therefore, option D is the correct solution.

**Question Context 6-7**

	Column 1	Column 2	Column 3
Row 1	15.5	14.12	69.5
Row 2	18.6	56.23	52.4
Row 3	21.4	47.02	63.21
Row 4	36.1	56.63	36.12

File Name – Dataframe.csv

7) Which of the following codes will read only the first two rows of the csv file?

- A) csv('Dataframe.csv',header=TRUE,row.names=1,sep=',',nrows=2)
- B) csv2('Dataframe.csv',row.names=1,nrows=2)
- C) delim2('Dataframe.csv',header=T,row.names=1,sep=',',nrows=2)
- D) dataframe('Dataframe.csv',header=TRUE,row.names=1,sep=',',skip.last=2)

**Solution: (A)**

Option B will not be able to read the csv file correctly since the default separator in csv2 function is ";" whereas csv files are of type ",". Option C has wrong header argument value. Option D doesn't exist. Therefore, Option A is the correct answer.

**Question Context 8**

Dataframe1

Feature1	Feature2	Feature3	Feature4
A	1000	25.5	10
B	2000	35.5	34
C	3000	45.5	78
D	4000	55.5	3

Dataframe2

Feature1	Feature2	Feature3
E	5000	65.5
F	6000	75.5
G	7000	85.5
H	8000	95.5

8) There are two dataframes stored Dataframe1 and Dataframe2 shown above. Which of the following codes will produce the output shown below?

Feature1	Feature2	Feature3
A	1000	25.5
B	2000	35.5
C	3000	45.5
D	4000	55.5
E	5000	65.5
F	6000	75.5
G	7000	85.5
H	8000	95.5

- A) merge(dataframe[,1:3],dataframe2)
- B) merge(dataframe1,dataframe2)[,1:3]
- C) merge(dataframe1,dataframe2,all=TRUE)
- D) Both 1 and 2
- E) All of the above

**Solution: (D)**

Option C will result in feature 4 being included in the merged dataframe which is what we do not want. Therefore, Option D is the correct solution.

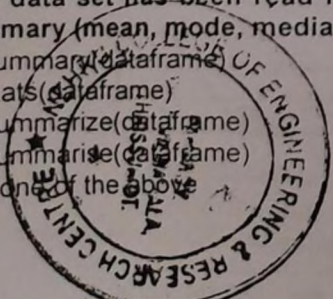
**Question Context 9**

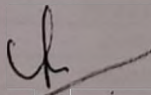
	V1	V2
1	121.5	461
2	516	1351
3	451	6918
4	613	112
5	112.36	230
6	25.23	1456
7	12	457

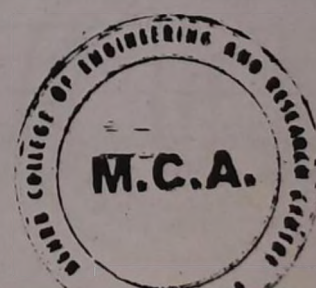
dataframe

9) A data set has been read in R and stored in a variable "dataframe". Which of the below codes will produce a summary (mean, mode, median) of the entire dataset in a single line of code?

- A) summary(dataframe)
- B) stats(dataframe)
- C) summarize(dataframe)
- D) summarise(dataframe)
- E) None of the above



  
**PRINCIPAL**  
 Nehru College of  
 Engineering and Research Centre  
 Panipady Thiruvilwamala Thiruvananthapuram  
 Pin 680 597 Kerala



**Solution: (E)**

Option A will give only the mean and the median but not the mode. Option B, C and D will also fail to provide the required statistics. Therefore, Option E is the correct solution.

**Question Context 10**

A dataset has been read in R and stored in a variable "dataframe". Missing values have been read as NA.

A	10	Sam
B	NA	Peter
C	30	Harry
D	40	NA
E	50	Mark

dataframe

10) Which of the following codes will not give the number of missing values in each column?

- A) colSums(is.na(dataframe))
- B) apply(is.na(dataframe),2,sum)
- C) sapply(dataframe,function(x) sum(is.na(x)))
- D) table(is.na(dataframe))

**Solution: (D)**

Option D will give the overall count of the missing values but not column wise. Therefore, Option D is the correct solution.

**Question context 11**

One of the important phase in a Data Analytics pipeline is univariate analysis of the features which includes checking for the missing values and the distribution, etc. Below is a dataset and we wish to plot histogram for "Value" variable.

Parameter	State	Value	Dependents
Alpha	Active	50	2
Beta	Active	45	5
Beta	Passive	25	0
Alpha	Passive	21	0
Alpha	Passive	26	1
Beta	Active	30	2
Beta	Passive	18	0

dataframed

11) Which of the following commands will help us perform that task ?

- A) hist(dataframed\$Value)
- B) ggplot2::qplot(dataframed\$Value,geom="Histogram")
- C) ggplot2::ggplot(data=dataframed,aes(dataframe\$Value))+geom\_histogram()
- D) All of the above

**Solution: (D)**

All of the given options will plot a histogram and that can be used to see the skewness of the desired data.

**Question Context 12.**

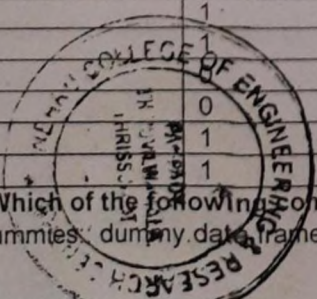
Parameter	State	Value	Usage
Alpha	Active	50	0
Beta	Active	45	1
Beta	Passive	25	0
Alpha	Passive	21	0
Alpha	Passive	26	1
Beta	Active	30	1
Beta	Passive	18	0

Certain Algorithms like XGBOOST work only with numerical data. In that case, categorical variables present in dataset are first converted to DUMMY variables which represent the presence or absence of a level of a categorical variable in the dataset. For example After creating the Dummy Variable for the feature "Parameter", the dataset looks like below.

Parameter_Alpha	Parameter_Beta	State	Value	Usage
1	0	Active	50	0
0	1	Active	45	1
0	1	Passive	25	0
1	0	Passive	21	0
1	0	Passive	26	1
0	1	Active	30	1
0	1	Passive	18	0

12) Which of the following commands will help us to achieve this?

- A) dummies = dummy.data.frame(dataframe,names=c('Parameter'))



PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Panipady Thiruvilwamala Thrissur Dt  
Kerala

- B) `dataframe$Parameter_Alpha=0`  
`dataframe$Gende_Beta=0`  
`dataframe$Parameter_Alpha[which(dataframe$Parameter=='Alpha')]=1`  
`dataframe$Parameter_Beta[which(dataframe$Parameter=='Alpha')]=0`  
`dataframe$Parameter_Alpha[which(dataframe$Parameter=='Beta')]=0`  
`dataframe$Parameter_Beta[which(dataframe$Parameter=='Beta')]=1`  
 C) `contrasts(dataframe$Parameter)`  
 D) Both 1 and 2

Solution: (D)

Option C will encode the `Parameter` column will 2 levels but will not perform one hot encoding. Therefore, option D is the correct solution.

Question context 13

	Column1	Column2	Column3	Column4	Column5	Column6
Name1	Alpha	12	24	54	0	Alpha
Name2	Beta	16	32	51	1	Beta
Name3	Alpha	52	104	32	0	Gamma
Name4	Beta	36	72	84	1	Delta
Name5	Beta	45	90	32	0	Phi
Name6	Alpha	12	24	12	0	Zeta
Name7	Beta	32	64	64	1	Sigma
Name8	Alpha	42	84	54	0	Mu
Name9	Alpha	56	112	31	1	Eta

dataframe

13) We wish to calculate the correlation between "Column2" and "Column3" of a "dataframe". Which of the below codes will achieve the purpose?

- A) `corr(dataframe$column2,dataframe$column3)`  
 B) `(cov(dataframe$column2,dataframe$column3))/(var(dataframe$column2)*sd(dataframe$column3))`  
 C) `(sum(dataframe$Column2*dataframe$Column3)-  
 (sum(dataframe$Column2)*sum(dataframe$Column3)/nrow(dataframe)))/(sqrt((sum(dataframe$Column2*dataframe$Column2)-  
 (sum(dataframe$Column2)^3)/nrow(dataframe))* (sum(dataframe$Column3*dataframe$Column3)-  
 (sum(dataframe$Column3)^2)/nrow(dataframe))))`  
 D) None of the Above

Solution: (D)

In option A, `corr` is the wrong function name. Actual function name to calculate correlation is `cor`. In option B, it is the standard deviation which should be the denominator and not variance. Similarly, the formula in Option C is wrong. Therefore, Option D is the correct solution.

Question Context 14

Parameter	State	Value	Dependents
Alpha	Active	50	2
Beta	Active	45	5
Beta	Passive	25	0
Alpha	Passive	21	0
Alpha	Passive	26	1
Beta	Active	30	2
Beta	Passive	18	0

dataframe

14) The above dataset has been loaded for you in R in a variable named "dataframe" with first row representing the column name. Which of the following code will select only the rows for which parameter is Alpha?

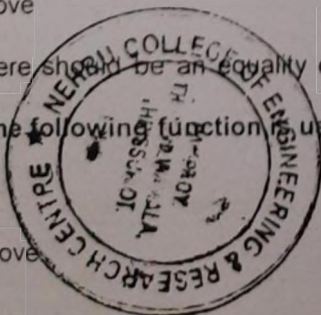
- A) `subset(dataframe, Parameter='Alpha')`  
 B) `subset(dataframe, Parameter=='Alpha')`  
 C) `filter(dataframe,Parameter=='Alpha')`  
 D) Both 2 and 3  
 E) All of the above

Solution: (D)

In option A, there should be an equality operator instead of the assignment operator. Therefore, option D is the correct solution.

15) Which of the following function is used to view the dataset in spreadsheet like format?

- A) `disp()`  
 B) `View()`  
 C) `seq()`  
 D) All of the Above



PRINCIPAL  
 Nehru College of  
 Engineering and Research Centre  
 Pattipady, Thiruvilwamala, Thiruvananthapuram  
 Pin 680 597 Kerala

**Solution : (B)**

Option B is the only option that will show the dataset in the spreadsheet format. Therefore, option B is the correct solution.

**Question Context 16**

The below dataframe is stored in a variable named data.

A	B
1	Right
2	Wrong
3	Wrong
4	Right
5	Right
6	Wrong
7	Wrong
8	Right

data  
16) Suppose B is a categorical variable and we wish to draw a boxplot for every level of the categorical level. Which of the below commands will help us achieve that?

- A) `boxplot(A,B,data=data)`
- B) `boxplot(A~B,data=data)`
- C) `boxplot(A|B,data=data)`
- D) None of the above

**Solution: (B)**

Boxplot function in R requires a formula input to draw different boxplots by levels of a factor variable. Therefore, Option B is the correct solution.

17) Which of the following commands will split the plotting window into 4 X 3 windows and where the plots enter the window column wise.

- A) `par(split=c(4,3))`
- B) `par(mfcol=c(4,3))`
- C) `par(mfrow=c(4,3))`
- D) `par(col=c(4,3))`

**Solution: (B)**

`mfcol` argument will ensure that the plots enter the plotting window column wise. Therefore, Option B is the correct solution.

**Question Context 18**

A Dataframe "df" has the following data:

Dates

- 2017-02-28
- 2017-02-27
- 2017-02-26
- 2017-02-25
- 2017-02-24
- 2017-02-23
- 2017-02-22
- 2017-02-21

After reading above data, we want the following output:

Dates

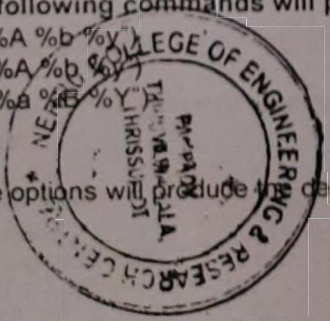
- 28 Tuesday Feb 17
- 27 Monday Feb 17
- 26 Sunday Feb 17
- 25 Saturday Feb 17
- 24 Friday Feb 17
- 23 Thursday Feb 17
- 22 Wednesday Feb 17
- 21 Tuesday Feb 17

18) Which of the following commands will produce the desired output?

- A) `format(df,"%d %A %b %y")`
- B) `format(df,"%D %A %b %Y")`
- C) `format(df,"%D %a %B %Y")`
- D) None of above

**Solution: (D)**

None of the above options will produce the desired output. Therefore, Option D is the correct solution.



*[Signature]*  
PRINCIPAL  
Nepe College of  
Engineering and Research Centre  
Pampady Thiruvananthapuram  
Pin 680 557

19) Which of the following command will help us to rename the second column in a dataframe named "table" from alpha to beta?

- A) colnames(table)[2]='beta'
- B) colnames(table)[which(colnames=='alpha')]='beta'
- C) setnames(table, 'alpha', 'beta')
- D) All of the above

**Solution: (D)**

All of the above options are different methods to rename the column names of a dataframe. Therefore, option D is the correct solution.

**Question Context: 20**

A majority of work in R uses systems internal memory and with large datasets, situations may arise when the R workspace cannot hold all the R objects in memory. So removing the unused objects is one of the solution.

20) Which of the following command will remove an R object / variable named "santa" from the workspace?

- A) remove(santa)
- B) rm(santa)
- C) Both
- D) None

**Solution: (C)**

remove and rm, both can be used to clear the workspace. Therefore, option C is the correct solution.

21) "dplyr" is one of the most popular package used in R for manipulating data and it contains 5 core functions to handle data. Which of the following is not one of the core functions of dplyr package?

- A) select()
- B) filter()
- C) arrange()
- D) summary()

**Solution: (D)**

summary is a function in the R base package and not dplyr.

**Context – Question 22**

During Feature Selection using the following dataframe (named table), "Column1" and "Column2" proved to be non-significant. Hence, we would not like to take these two features into our predictive model.

	Column1	Column2	Column3	Column4	Column5	Column6
Name1	Alpha	12	24	54	0	Alpha
Name2	Beta	16	32	51	1	Beta
Name3	Alpha	52	104	32	0	Gamma
Name4	Beta	36	72	84	1	Delta
Name5	Beta	45	90	32	0	Phi
Name6	Alpha	12	24	12	0	Zeta
Name7	Beta	32	64	64	1	Sigma
Name8	Alpha	42	84	54	0	Mu
Name9	Alpha	56	112	31	1	Eta

22) Which of the following commands will select all the rows from column 3 to column 6 for the below dataframe named table?

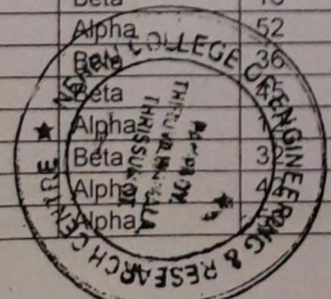
- A) dplyr::select(table, Column3:Column6)
- B) table[,3:6]
- C) subset(table, select=c('Column3', 'Column4', 'Column5', 'Column6'))
- D) All of the above

**Solution: (D)**

Option A, B and C are different column sub setting methods in R. Therefore, option D is the correct solution.

**Context Question 23-24**

	Column1	Column2	Column3	Column4	Column5	Column6
Name1	Alpha	12	24	54	0	Alpha
Name2	Beta	16	32	51	1	Beta
Name3	Alpha	52	104	32	0	Gamma
Name4	Beta	36	72	84	1	Delta
Name5	Beta	45	90	32	0	Phi
Name6	Alpha	12	24	12	0	Zeta
Name7	Beta	32	64	64	1	Sigma
Name8	Alpha	42	84	54	0	Mu
Name9	Alpha	56	112	31	1	Eta



**PRINCIPAL**  
 Nehru College of  
 Engineering and Research Centre  
 Pampady Thiruvilwamala, Thiruvananthapuram  
 Pin: 686 007

table

23) Which of the following commands will select the rows having "Alpha" values in "Column1" and value less than 50 in "Column4"? The dataframe is stored in a variable named table.

- A) `dplyr::filter(table, Column1=='Alpha', Column4<50)`
- B) `dplyr::filter(table, Column1=='Alpha' & Column4<50)`
- C) Both of the above
- D) None of the above

Solution: (C)

1. filter function in dplyr package uses "," and "&" to add the condition. Therefore, Option C is the correct solution.

Question Context 23-24

	Column1	Column2	Column3	Column4	Column5	Column6
Name1	Alpha	12	24	54	0	Alpha
Name2	Beta	16	32	51	1	Beta
Name3	Alpha	52	104	32	0	Gamma
Name4	Beta	36	72	84	1	Delta
Name5	Beta	45	90	32	0	Phi
Name6	Alpha	12	24	12	0	Zeta
Name7	Beta	32	64	64	1	Sigma
Name8	Alpha	42	84	54	0	Mu
Name9	Alpha	56	112	31	1	Eta

table

24) Which of the following code will sort the dataframe based on "Column2" in ascending order and "Column3" in descending order?

- A) `dplyr::arrange(table, desc(Column3), Column2)`
- B) `table[order(-Column3, Column2),]`
- C) Both of the above
- D) None of the above

Solution: (C)

Both order and arrange functions can be used to order the columns in R. Therefore, Option C is the correct solution.

25) Dealing with strings is an important part of text analytics and splitting a string is often one of the common task performed while creating tokens, etc. What will be the output of following commands?

```
A<-paste("alpha","beta","gamma",sep=" ")
```

```
B<-paste("phi","theta","zeta",sep="")  
parts<-strsplit(c(A,B),split=" ")
```

- A) alpha
- B) beta
- C) gamma
- D) phi
- E) theta
- F) zeta

Solution: (B)

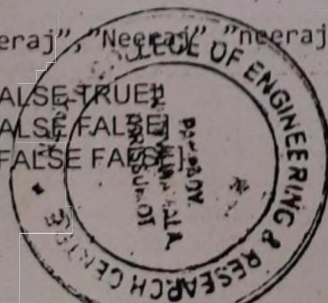
`c(A,B)` would concatenate `A="alpha beta gamma"` and `B="phithetazeta"` separated by a white space. Upon using `strsplit`, the two strings will be separated at the white space between A and B into two lists. `Parts[[1]][2]` tells us to print the second sub element of the first element of the list which is "beta". Therefore, option B is the correct solution.

26) What will be the output of the following command

```
grep1("neeraj",c("dheeraj","Neeraj","neeraj","is","NEERAJ"))
```

- A) [FALSE TRUE TRUE FALSE TRUE]
- B) [FALSE TRUE TRUE FALSE FALSE]
- C) [FALSE FALSE TRUE FALSE FALSE]
- D) None of the above

Solution: (C)



PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Kerala Dt  
Pin 680 597 Kerala

The above command will go for the exact match of the passed argument and therefore Option C is the correct solution.

### Question Context 27

Sometimes as a Data Scientist working on textual data we come across instances where we find multiple occurrences of a word which is unwanted. Below is one such string.

```
A<-c("I can use because thrice in a sentence because because is a special word.")
```

- A) gsub("because", "since", A)
- B) sub("because", "since", A)
- C) regexec("because", "since", A)
- D) None of the above

**Solution: (A)**

sub command will replace only the first occurrence in a string whereas regexec will return a list of positions of the match or -1 if no match occurs. Therefore, Option A is the correct solution.

28) Imagine a dataframe created through the following code.

Which of the following command will help us remove the duplicate rows based on both the columns?

- A) df[!duplicated(df),]
- B) unique(df)
- C) dplyr::distinct(df)
- D) All of the above

**Solution: (D)**

All the above methods are different ways of removing the duplicate rows based on both the columns. Therefore, Option D is the correct solution.

### Question Context 29

Grouping is an important activity in Data Analytics and it helps us discover some interesting trends which may not be visible easily in the raw data.

Suppose you have a dataset created by the following lines of code..

```
table<-data.table(foo=c("A", "B", "A", "A", "B", "A"), bar=1:6)
```

29) Which of the following command will help us to calculate the mean bar value grouped by foo variable?

- A) aggregate(bar~foo, table, mean)
- B) table[, mean(bar), by=foo]
- C) dplyr::table%>%group\_by(foo)%>%summarize(mean=mean(bar))
- D) All of the above

**Solution: (D)**

All the above methods are used to calculate the grouped statistic of a column. Therefore, Option D is the correct solution.

30) If I have two vectors  $x \leftarrow c(1, 3, 5)$  and  $y \leftarrow c(3, 2)$ , what is produced by the expression `cbind(x, y)`?

- A) a matrix with 2 columns and 3 rows
- B) a matrix with 3 columns and 2 rows
- C) a data frame with 2 columns and 3 rows
- D) a data frame with 3 columns and 2 rows

**Solution: (D)**

All of the above options define messy data and hence Option D is the correct solution.

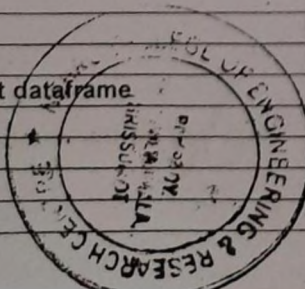
31) Which of the following commands will convert the following dataframe named maverick into the one shown at the bottom?

Input Dataframe - "maverick"

Grade	Male	Female
A	10	15
B	20	15
A	30	35

Output dataframe

Grade	Sex	Count
A	Male	10
A	Female	15
B	Male	30



PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilvamala, Thiruvananthapuram  
Pin 680 597 Kerala

B	Female	15
A	Male	30
A	Female	35

- A) `tidyr::gather(maverick, Sex, Count, -Grade)`  
 B) `tidyr::spread(maverick, Sex, Count, -Grade)`  
 C) `tidyr::collect(maverick, Sex, Count, -Grade)`  
 D) None of the above

**Solution: (A)**

Spread command converts rows into columns whereas there is no collect command in tidyr or base package. Therefore, Option A is the correct solution.

32) Which of the following command will help us to replace every instance of Delhi with Delhi\_NCR in the following character vector?

```
C<-c("Delhi is", "a great city.", "Delhi is also", "the capital of India.")
```

- A) `gsub("Delhi", "Delhi_NCR", C)`  
 B) `sub("Delhi", "Delhi_NCR", C)`  
 C) Both of the above  
 D) None of the above

**Solution: (C)**

Though sub command only replaces the first occurrence of a pattern. In this case, strings have just a single appearance of Delhi. Hence, both gsub and sub command will work in this situation. Therefore, Option C is the correct solution.

#### Question Context 33

Sometimes creating a feature which represents whether another variable has missing values or not can prove to be very useful for a predictive model.

Below is a dataframe which has missing values in one of its columns.

Feature1	Feature2
B	NA
C	30
D	40
E	50

33) Which of the following commands will create a column named "missing" with value 1 where variable "Feature2" has missing values?

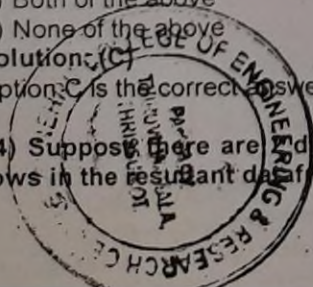
Feature1	Feature2	Missing
B	NA	1
C	30	0
D	40	0
E	50	0

- A) `dataframe$missing<-0`  
`dataframe$Missing[is.na(dataframe$Feature2)]<-1`  
 B) `dataframe$missing<-0`  
`dataframe$Missing[which(is.na(dataframe$Feature2))]<-1`  
 C) Both of the above  
 D) None of the above

**Solution: (C)**

Option C is the correct answer.

34) Suppose there are 2 dataframes "A" and "B". A has 34 rows and B has 46 rows. What will be the number of rows in the resultant dataframe after running the following command?



merge(A,B,all.x=TRUE)

- A) 46
- B) 12
- C) 34
- D) 80

Solution: (C)

all.x forces the merging to take place on the basis of A and hence will contain the same number of rows as of A. Therefore, Option C is the correct solution.

**Question context 35**

The very first thing that a Data Scientist generally does after loading dataset is find out the number of rows and columns the dataset has. In technical terms, it is called knowing the dimensions of the dataset. This is done to get an idea about the scale of data that he is dealing with and subsequently choosing the right techniques and tools.

35) Which of the following command will not help us to view the dimensions of our dataset?

- A) dim()
- B) str()
- C) View()
- D) None of the above

Solution: (C)

View command will print the dataset to the console in a spreadsheet like format but will not help us to view the dimensions. Therefore, option C is the correct solution.

**Question context 36**

Sometimes, we face a situation where we have two columns of a dataset and we wish to know which elements of the column are not present in another column. This is easily achieved in R using the setdiff command.

	Column1	Column2	Column3	Column4	Column5	Column6
Name1	Alpha	12	24	54	0	Zion
Name2	Beta	16	32	51	1	Beta
Name3	Alpha	52	104	32	0	Gamma
Name4	Beta	36	72	84	1	Delta
Name5	Beta	45	90	32	0	Phi
Name6	Alpha	12	24	12	0	Zeta
Name7	Beta	32	64	64	1	Sigma
Name8	Alpha	42	84	54	0	Mu
Name9	Alpha	56	112	31	1	Eta

dataframe

36) What will be the output of the following command?

```
setdiff(dataframe$Column1,dataframe$Column6)==setdiff(dataframe$Column6,dataframe$Column1)
```

- A) TRUE
- B) FALSE
- C) Can't Say

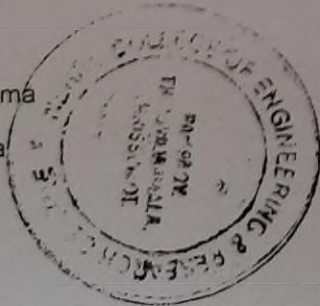
Solution: (B)

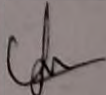
The order of arguments matter in setdiff function. Therefore, option B is the correct solution.

**Question Context 37**

The below dataset is stored in a variable called "frame".

A	B
alpha	100
beta	120
gamma	80
delta	110



  
**PRINCIPAL**  
Nehru College of  
Engineering and Research Cent.  
Panipady Thiruvilwamala, Thrissur U.  
Pin 680 597 Kerala

37) Which of the following commands will create a bar plot for the above dataset. Use the values from Column B to represent the height of the bar plot.

- A) `ggplot(frame,aes(A,B))+geom_bar(stat="identity")`
- B) `ggplot(frame,aes(A,B))+geom_bar(stat="bin")`
- C) `ggplot(frame,aes(A,B))+geom_bar()`
- D) None of the above

Solution: (A)

`stat="identity"` will ensure the values in column B become the height of the bar. Therefore, Option A is the correct solution

Question Context 38

A	mpg	cyl	disp	hp	drat	wt	qsec	vs	am	gear	carb
Mazda RX4	21.0	6	160	110	3.90	2.620	16.46	0	1	4	4
Mazda RX4 Wag	21.0	6	160	110	3.90	2.875	17.02	0	1	4	4
Datsun 710	22.8	4	108	93	3.85	2.320	18.61	1	1	4	1
Hornet Drive	21.4	6	258	110	3.08	3.215	19.44	1	0	3	1
Hornet Sportabout	18.7	8	360	175	3.15	3.440	17.02	0	0	3	2
Valiant	18.1	6	225	105	2.76	3.460	20.22	1	0	3	1

38) We wish to create a stacked bar chart for cyl variable with stacking criteria Being vs Variable. Which of the following commands will help us perform this action?

- A) `qplot(factor(cyl),data=mtcars,geom="bar",fill=factor(vs))`
- B) `ggplot(mtcars,aes(factor(cyl),fill=factor(vs)))+geom_bar()`
- C) All of the above
- D) None of the above

Solution: (C)

Both options A and B will create a stacked bar chart guided by the "fill" parameter. Therefore, option C is the correct solution.

39) What is the output of the command – `paste(1:3,c("x","y","z"),sep="")` ?

- A) [1 2 3x y z]
- B) [1:3x y z]
- C) [1x 2y 3z]
- D) None of the above

Solution: (C)

Question Context 40

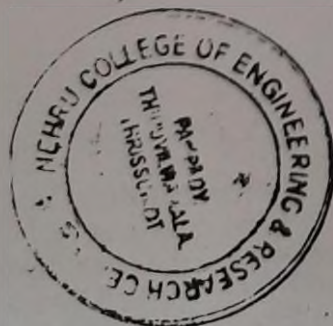
R has a rich library reserve for drawing some of the very high end graphs and plots and many a times you want to save the graphs for presenting your findings to someone else. Saving your plots to a PDF file is one such option.

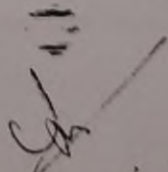
40) If you want to save a plot to a PDF file, which of the following is a correct way of doing that?

- A) Construct the plot on the screen device and then copy it to a PDF file with `dev.copy2pdf()`.
- B) Construct the plot on the PNG device with `png()`, then copy it to a PDF with `dev.copy2pdf()`.
- C) Open the PostScript device with `postscript()`, construct the plot, then close the device with `dev.off()`.
- D) Open the screen device with `quartz()`, construct the plot, and then close the device with `dev.off()`.

Solution: (A)

The plots are first created on the screen device and then can be copied easily to a pdf file. Therefore, option A is the correct solution.



  
**PRINCIPAL**  
 Nehru College of  
 Engineering and Research Centre  
 Panipady, Thuvilwanale  
 Pin. 630 597 Kerala

JIBIN VARGHESE  
MCA

NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
DEPARTMENT OF MCA

R Programming Question Paper  
Each question carries 1 mark

Question Context 1

Consider the following function.

```
f <- function(x) {  
  g <- function(y) {  
    y + z  
  }  
  z <- 4  
  x + g(x)  
}
```

1) If we execute following commands (written below), what will be the output?

z <- 10

f(4)

- A) 12
- B) 7
- C) 4
- D) 16

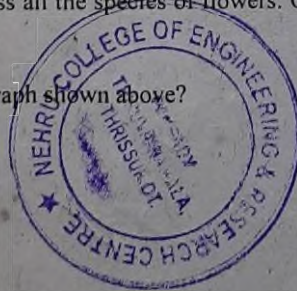



Question context 2

The iris dataset has different species of flowers such as Setosa, Versicolor and Virginica with their sepal length. Now, we want to understand the distribution of sepal length across all the species of flowers. One way to do this is to visualise this relation through the graph shown below.

2) Which function can be used to produce the graph shown above?

- A) xyplot()
- B) stripplot()
- C) barchart()
- D) bwplot()



  
PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Panipady Thiruvilwamala Thiruvilwamala  
Pin 680 597, Kerala

Question Context 3

Alpha	125.5	0
Beta	235.6	1
Beta	212.03	0
Beta	211.30	0
Alpha	265.46	1

File Name - Dataframe.csv

411

3) Which of the following commands will correctly read the above csv file with 5 rows in a dataframe?

- A) csv('Dataframe.csv')
- B) csv('Dataframe.csv',header=TRUE)
- C) dataframe('Dataframe.csv')
- D) csv2('Dataframe.csv',header=FALSE,sep=',')

Question Context 4

Excel file format is one of the most common formats used to store datasets. It is important to know how to import an excel file into R. Below is an excel file in which data has been entered in the third sheet.

Alpha	125.5	0
Beta	235.6	1
Beta	212.03	0
Beta	211.30	0
Alpha	265.46	1

File Name - Dataframe.xlsx

4) Which of the following codes will read the above data in the third sheet into a dataframe in R?

- A) Openxlsx::read.xlsx("Dataframe.xlsx",sheet=3,colNames=FALSE)
- B) Xlsx::read.xlsx("Dataframe.xlsx",sheetIndex=3,header=FALSE)
- C) XLConnect::readWorksheetFromFile("Dataframe.xlsx",sheet=3,header=FALSE)
- D) All of the above

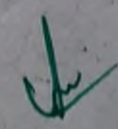
Question Context 5

A		10	Sam
B		20	Peter
C		30	Harry
D		!	?
E		50	Mark

File Name - Dataframe.csv

5) Missing values in this csv file has been represented by an exclamation mark ("!") and a question mark ("?"). Which of the codes below will read the above csv file correctly into R?

- A) csv('Dataframe.csv')
- B) csv('Dataframe.csv',header=FALSE,sep=',,na.strings=c('?'))
- C) csv2('Dataframe.csv',header=FALSE,sep=',,na.strings=c('?', '!'))
- D) dataframe('Dataframe.csv')

  
**PRINCIPAL**  
 Nehru College of Engineering  
 Pampadi

Question Context 6-7

	Column 1	Column 2	Column 3
Row 1	15.5	14.12	69.5
Row 2	18.6	56.23	52.4
Row 3	21.4	47.02	63.21
Row 4	36.1	56.63	36.12

File Name – Dataframe.csv

6) The above csv file has row names as well as column names. Which of the following code will read the above csv file properly into R?

- A) `delim('Train.csv',header=T,sep=',',row.names=TRUE)`
- B) `csv2('Train.csv',header=TRUE, row.names=TRUE)`
- C) `dataframe('Train.csv',header=TRUE,sep=',')`
- D) `csv('Train.csv',header=TRUE,sep=',')`

Question Context 6-7

	Column 1	Column 2	Column 3
Row 1	15.5	14.12	69.5
Row 2	18.6	56.23	52.4
Row 3	21.4	47.02	63.21
Row 4	36.1	56.63	36.12

File Name – Dataframe.csv

7) Which of the following codes will read only the first two rows of the csv file?

- A) `csv('Dataframe.csv',header=TRUE,row.names=1,sep=',',nrows=2)`
- B) `csv2('Dataframe.csv',row.names=1,nrows=2)`
- C) `delim2('Dataframe.csv',header=T,row.names=1,sep=',',nrows=2)`
- D) `dataframe('Dataframe.csv',header=TRUE,row.names=1,sep=',',skip.last=2)`



Question Context 8

Dataframe1

Feature1	Feature2	Feature3	Feature4
A	1000	25.5	10
B	2000	35.5	34
C	3000	45.5	78
D	4000	55.5	3

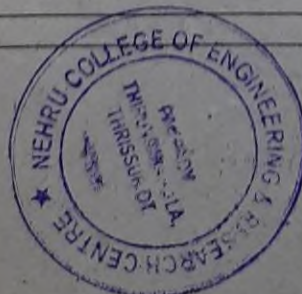
Dataframe2

Feature1	Feature2	Feature3
E	5000	65.5
F	6000	75.5
G	7000	85.5
H	8000	95.5

8) There are two dataframes stored Dataframe1 and Dataframe2 shown above. Which of the following codes will produce the output shown below?

Feature1	Feature2	Feature3
A	1000	25.5
B	2000	35.5
C	3000	45.5
D	4000	55.5
E	5000	65.5
F	6000	75.5
G	7000	85.5
H	8000	95.5

- A) `merge(dataframe[,1:3],dataframe2)`
- B) `merge(dataframe1,dataframe2)[,1:3]`
- C) `merge(dataframe1,dataframe2,all=TRUE)`



PRINCIPAL

Nehru College of  
Engineering and Research Centre  
Chempady Thiruvilwamala, Thiruvananthapuram Dt  
Pin - 686 597 Kerala

D) Both 1 and 2

E) All of the above

Question Context 9

	V1	V2
1	121.5	461
2	516	1351
3	451	6918
4	613	112
5	112.36	230
6	25.23	1456
7	12	457

dataframe

9) A data set has been read in R and stored in a variable "dataframe". Which of the below codes will produce a summary (mean, mode, median) of the entire dataset in a single line of code?

A) summary(dataframe)

B) stats(dataframe)

C) summarize(dataframe)

D) summarise(dataframe)

E) None of the above

Question Context 10

A dataset has been read in R and stored in a variable "dataframe". Missing values have been read as NA.

A	10	Sam
B	NA	Peter
C	30	Harry
D	40	NA
E	50	Mark

dataframe

10) Which of the following codes will not give the number of missing values in each column?

A) colSums(is.na(dataframe))

B) apply(is.na(dataframe), 2, sum)

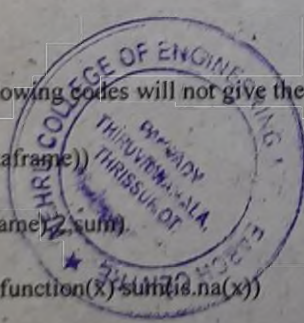
C) sapply(dataframe, function(x) sum(is.na(x)))

D) table(is.na(dataframe))

Question context 11

One of the important phase in a Data Analytics pipeline is univariate analysis of the features which includes checking for the missing values and the distribution, etc. Below is a dataset and we wish to plot histogram for "Value" variable.

Parameter	State	Value	Dependents
Alpha	Active	50	2
Beta	Active	45	5
Beta	Passive	25	0



*[Handwritten signature]*

**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala, Thiruvananthapuram  
Pin - 680 597 Kerala

Alpha	Passive	21	0
Alpha	Passive	26	1
Beta	Active	30	2
Beta	Passive	18	0

dataframed

1) Which of the following commands will help us perform that task ?

A) hist(dataframed\$Value)

B) ggplot2::qplot(dataframed\$Value,geom="Histogram")

C) ggplot2::ggplot(data=dataframed,aes(dataframe\$Value))+geom\_histogram()

D) All of the above

Question Context 12

Parameter	State	Value	Usage
Alpha	Active	50	0
Beta	Active	45	1
Beta	Passive	25	0
Alpha	Passive	21	0
Alpha	Passive	26	1
Beta	Active	30	1
Beta	Passive	18	0

Certain Algorithms like XGBOOST work only with numerical data. In that case, categorical variables present in dataset are first converted to DUMMY variables which represent the presence or absence of a level of a categorical variable in the dataset. For example After creating the Dummy Variable for the feature "Parameter", the dataset looks like below.

Parameter_Alpha	Parameter_Beta	State	Value	Usage
1	0	Active	50	0
0	1	Active	45	1
0	1	Passive	25	0
1	0	Passive	21	0
1	0	Passive	26	1
0	1	Active	30	1
0	1	Passive	18	0

2) Which of the following commands will help us to achieve this?

A) dummies:: dummy.data.frame(dataframe,names=c('Parameter'))

B) dataframe\$Parameter\_Alpha=0

dataframe\$Gende\_Beta=0

dataframe\$Parameter\_Alpha[which(dataframe\$Parameter=='Alpha')]=1

dataframe\$Parameter\_Beta[which(dataframe\$Parameter=='Alpha')]=0

dataframe\$Parameter\_Alpha[which(dataframe\$Parameter=='Beta')]=0

dataframe\$Parameter\_Beta[which(dataframe\$Parameter=='Beta')]=1

C) contrasts(dataframe\$Parameter)

D) Both 1 and 2



PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Thiruvananthapuram, Thiruvananthapuram

Question context 13

	Column1	Column2	Column3	Column4	Column5	Column6
Name1	Alpha	12	24	54	0	Alpha
Name2	Beta	16	32	51	1	Beta
Name3	Alpha	52	104	32	0	Gamma
Name4	Beta	36	72	84	1	Delta
Name5	Beta	45	90	32	0	Phi
Name6	Alpha	12	24	12	0	Zeta
Name7	Beta	32	64	64	1	Sigma
Name8	Alpha	42	84	54	0	Mu
Name9	Alpha	56	112	31	1	Eta

dataframe

13) We wish to calculate the correlation between "Column2" and "Column3" of a "dataframe". Which of the below codes will achieve the purpose?

A) `corr(dataframe$column2,dataframe$column3)`

B) `(cov(dataframe$column2,dataframe$column3))/(var(dataframe$column2)*sd(dataframe$column3))`

C) `(sum(dataframe$Column2*dataframe$Column3)-  
(sum(dataframe$Column2)*sum(dataframe$Column3)/nrow(dataframe)))/(sqrt((sum(dataframe$Column2*dataframe$Column2)-(sum(dataframe$Column2)^3)/nrow(dataframe))* (sum(dataframe$Column3*dataframe$Column3)-(sum(dataframe$Column3)^2)/nrow(dataframe))))`

D) None of the Above

Question Context 14

Parameter	State	Value	Dependents
Alpha	Active	50	2
Beta	Active	45	5
Beta	Passive	25	0
Alpha	Passive	21	0
Alpha	Passive	26	1
Beta	Active	30	2
Beta	Passive	18	0

dataframe

14) The above dataset has been loaded for you in R in a variable named "dataframe" with first row representing the column name. Which of the following code will select only the rows for which parameter is Alpha?

A) `subset(dataframe, Parameter=='Alpha')`

B) `subset(dataframe, Parameter==Alpha)`

C) `filter(dataframe,Parameter=='Alpha')`

D) Both 2 and 3

E) All of the above



*[Signature]*  
**PRINCIPAL**  
 Nehru College of  
 Engineering and Research Centre  
 Paripady Thiruvilwamala, Thiruvananthapuram Dt.  
 Pin 680 597 Kerala

15) Which of the following function is used to view the dataset in spreadsheet like format?

A) `disp()`

B) `View()`

C) seq()

D) All of the Above

Question Context 16

The below dataframe is stored in a variable named data.

A	B
1	Right
2	Wrong
3	Wrong
4	Right
5	Right
6	Wrong
7	Wrong
8	Right

data

16) Suppose B is a categorical variable and we wish to draw a boxplot for every level of the categorical level. Which of the below commands will help us achieve that?

A) `boxplot(A,B,data=data)`

B) `boxplot(A~B,data=data)`

C) `boxplot(A|B,data=data)`

D) None of the above

17) Which of the following commands will split the plotting window into 4 X 3 windows and where the plots enter the window column wise.

A) `par(split=c(4,3))`

B) `par(mfcol=c(4,3))`

C) `par(mfrow=c(4,3))`

D) `par(col=c(4,3))`

Question Context 18

A Dataframe "df" has the following data:

Dates

2017-02-28

2017-02-27

2017-02-26

2017-02-25

2017-02-24

2017-02-23

2017-02-22



*[Handwritten signature]*

PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thiruvananthapuram Dt  
Pin - 680 597 Kerala

2017-02-21

After reading above data, we want the following output:

Dates

28 Tuesday Feb 17

27 Monday Feb 17

26 Sunday Feb 17

25 Saturday Feb 17

24 Friday Feb 17

23 Thursday Feb 17

22 Wednesday Feb 17

21 Tuesday Feb 17

18) Which of the following commands will produce the desired output?

A) `format(df,"%d %A %b %y")`

B) `format(df,"%D %A %b %y")`

C) `format(df,"%D %a %B %Y")`

D) None of above

19) Which of the following command will help us to rename the second column in a dataframe named "table" from alpha to beta?

A) `colnames(table)[2]='beta'`

B) `colnames(table)[which(colnames=='alpha')]='beta'`

C) `setnames(table,'alpha','beta')`

D) All of the above

Question Context: 20

A majority of work in R uses systems internal memory and with large datasets, situations may arise when the R workspace cannot hold all the R objects in memory. So removing the unused objects is one of the solution.

20) Which of the following command will remove an R object / variable named "santa" from the workspace?

A) `remove(santa)`

B) `rm(santa)`

C) Both

D) None



*Handwritten signature*

PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Paripady Thiruvikrama Thirissur Dt  
Pin 686 014 Kerala

**NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE**

**MCA DEPARTMENT 2016 – 2017**

**MARK LIST OF STUDENTS**

7<sup>th</sup> – 18<sup>th</sup> Nov 2016

NO.	NAME	MARK
1	AISWARYA K	20
2	AISWARYA R	19
3	AMAL N P	18
4	ANJU K	18
5	ANJU S	17
6	ANNAPOORNI K G	17
7	ANUMOL ANTONY	14
8	ASWATHI.V.	15
9	DIVYA P	16
10	GANESH NARAYANAN	15
11	HIMA S	14
12	HONEY XAVIER	16
13	JISHA P J	17
14	JITHU POUL	18
15	KEERTHY A R	19
16	KRISHNA PRIYA. S.	19
17	KRISHNA SHARMA K	17
18	LAKSHMIDEVI M V	17
19	MANSOOR E	18
20	MANU KRISHNAN K	14
21	MEERADEVI M	15
22	NAIR ANISHA BALAKRISHNAN	16
23	NEERAJ KRISHNAN P	14
24	NEON K K	14
25	NIJEESH P R	15
26	PREETHI K	14
27	PRIYANKA RAJ S	15
28	REVATHY T C	16
29	SHAMEEMA K P	17



**PRINCIPAL**

Nehru College of  
Engineering and Research Centre  
Pampady, Thiruvilwamala, Thrissur



*[Handwritten signature]*

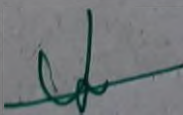
30	SHEEBA A	18
31	SHILPA RAMESH P	14
32	SMINUMOL E S	19
33	SOMYA N	14
34	SONI K	15
35	SUDHISHMA T	19
36	VIBITHA C	17
37	VISHAL P V	18
38	AISWARYA K R	14
39	AJESH A J	15
40	ASHA JOHNY	16
41	ASHITHA B Y	14
42	ATHIRA O M	17
43	BINDHU BALACHANDRAN	18
44	DEVI KRISHNA P R	19
45	DIPIN K S	20
46	DIVYA K	14
47	FAYIS K T	15
48	JAYASREE P	16
49	JIBIN VARGHESE	17
50	MOHAMMED RAOFAL	18
51	NAMITHA P S	17
52	NANCY KOCHOUSEPH	17
53	NEELIMA M P	18
54	NIDHILA K	18
55	PRESSY MATHEW	19
56	RAIBY M BENNY	20
57	SHAMILA M I	20
58	SHOBICA KAILAS S	14
59	SNEHA MOHAN P	15
60	SREEJITH K	15
61	SUBAIR A S	16
62	SUMI M	17
63	AISWARYA C	17



PRINCIPAL  
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala Thiruvananthapuram  
Pin 680 597 Kerala

64	AISWARYA M A	18
65	AISWARYA RAJENDRAN V	18
66	AMUDA K	19
67	ATHIRA K	14
68	HARITHA K S	14
69	JIJIN P	15
70	KARISHMA K	16
71	M SUKANYA	17
72	MEERA N	18
73	MEHAZA NAJEEB	19
74	MOHAMED MUSTHAFA P	18
75	MOUNIKA V	17
76	RESHMA M	17
77	RESHMI R	18
78	SHIVIN WILSON N	14
79	SHYAM M S	15
80	SILNA K WILSON	14
81	SIRIL M R	15
82	SREELAKSHMI C	16
83	SREENATH M P	15
84	SRUTHY M	16
85	STEPHY SEBASTIAN	16
86	SUMILA S	18
87	THANSIHA NASRIN A	19
88	VINDHUJA V	18
89	VINI C V	20



  
**PRINCIPAL**  
 Nehru College of  
 Engineering and Research Centre  
 Pampady Thiruvilwamala, Thiruvananthapuram Dt  
 Pin 680 597 Kerala



SRM VELLORE COLLEGE OF ENGINEERING AND RESEARCH CENTRE

DEPARTMENT OF MCA

30Hour Add-on Program 7th - 18th November 2016

*Certificate Of Participation*

It is to certify that Mr./Mrs.....SUBAIR A S.....of  
SRM VELLORE COLLEGE OF ENGINEERING & RESEARCH CENTRE college has actively participated  
in value added program " R Programming ". Upon completion of theoretical and  
practical modules and successfully completed the assessment test this document of  
participation is presented.

Course Co-ordinator

HOD-MCA Dept.

SRM VELLORE COLLEGE OF ENGINEERING AND RESEARCH CENTRE  
Kilasa Road, Vellore - 690017  
Tamil Nadu - 690017  
Ph: 04265870000



**Nehru College of  
Engineering and Research Centre**  
Nila Gardens, Pampady, Thiruvilwamala,  
Thrissur 680588.

**Department of MCA  
Presents**

**Value Added Program  
R Programming**



**Dates : 7th - 18th November 2016**

**Resource Person : Mr. Abduravoof  
Pentagon Solutions**

**Venue : Kapila, NCERC**

**For enquiries contact Coordinator:  
Mr. Ashish L (8281525177)**



**PRINCIPAL**  
Nehru College of  
Engineering and Research Centre  
Pampady Thiruvilwamala, Thrissur