Criterion No: 2.2.1

Criterion Details: The institution assesses the learning levels of the students and organizes special Programmes for advanced learners and slow learners.

S. No.	Particulars	AnnexureNo.
1.	Process Manual for Slow Learner & Advanced Learner	Annexure - I
2.	Sample Copy of Identification of Advanced and Slow Learner • Department of Computer Science and Engineering • Department of Journalism and Mass Communication	Annexure - II
3.	Sample Copy of Bridge Course	Annexure - III

Process Manual

for

Slow Learners

&

Advance Learners

Internal Quality Assurance Cell (IQAC)

TULA'S
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Estd. 2006

PROCESS MANUAL

FOR SLOW LEARNERS
&
ADVANCED LEARNERS
(IDENTIFICATION & ACTIVITIES)

w.e.f. 2019-20

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Director
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Co-ordinator, IQAC
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1. Introduction

A classroom contains students with variable intelligence quotient (IQ). In everyday teaching learning process, a faculty deals with the students; who learns very fast, some are average learners and some are quite weak who learn slowly. So, it is necessary for a faculty member to evaluate and analyse the abilities of their students in the class rooms.

Based on the learning abilities of the students, some students need only guidance and some students need a hard work and extra attention. On the basis of their current subject performance and class observation, students can be classified in two groups:

- Advanced learners
- Slow learners

A faculty member has to adapt a teaching methodology such that he/she may not lose the attention of the slow learners and turn off the advanced learners. To improve the teaching learning process, this document provides basic guidelines for faculty members to perform classroom assessment. The purpose of assessment of the learning levels of the students and conduction of activities for them are:

- Identification of the slow learners and advanced learners in the class.
- To ensure that slow learners and advanced learners are taken care as per their needs.
- To help them out for improvement in their academics.

The remainder of this manual describes the constituent parts of the slow learner and advanced learner identification process and activates for them and includes guidance on process.

2. Process Input

To start identification of slow and advanced learners, following inputs is needed

- Class test results
- Class observation by subject teacher

3. Identification and Activities to Process of Slow and Advanced Learners

The process of assessment of the learning levels of the students and conduction of activities for them is carried out through a systematic procedure. A flow chart representation of assessment process is drawn in the following Figure 1.

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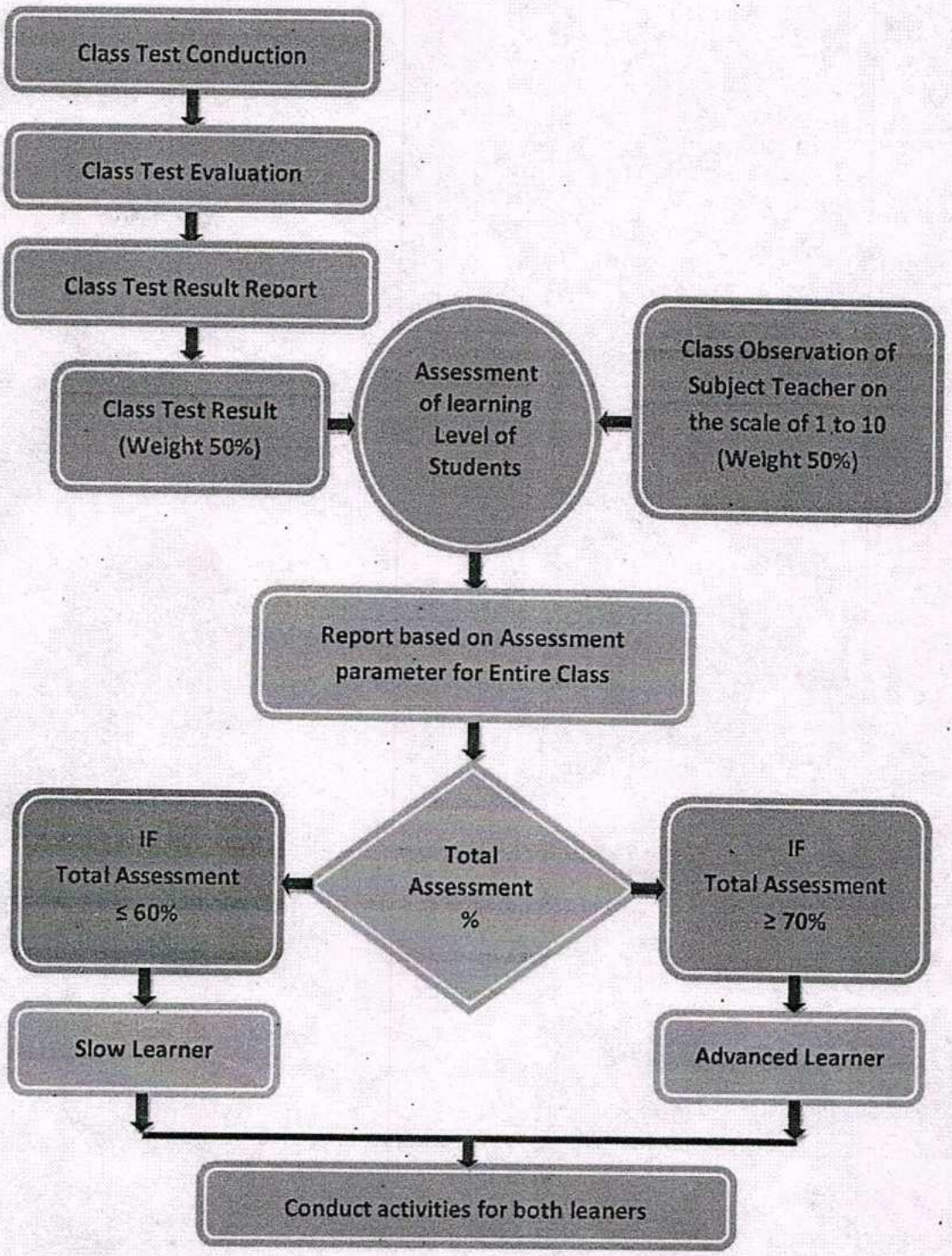

Figure 1. The process of assessment of the learning levels.

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3.1. Assessment of the learning levels of the students

- For **each subject** the students are categorized as Slow and advanced learners.
- This process is carried out by **all the subject teachers** separately, in **all semesters**.
- Process to identify the slow and advanced learners is conducted immediately with commence of first sessional exam.
- Every subject teacher will conduct a class test (i.e., 1st sessional test) of their subject on syllabus covered till date.
- Slow and advanced learners are identified based on the parameters and their weightage tabulated on Table 1.

Table 1. Student categorization parameters

SNo	Parameters	Weightage in Percentage
1	Marks obtained by student in first class test in respective subject	50 %
2	Subject teacher observation	50 %

- For categorization 50% weightage is taken for 1st Parameter.
- For 2nd Parameter, each student is assessed on the scale of 1 to10 by the subject teacher.
- Finally, based upon the above parameters a report will be prepared for whole class with 100% weightage by respective faculty member.
- The student securing marks below 60% will be identified as Slow Learners and the student securing marks above 70% will be identified as Advanced Learners.
- After that separate list are prepared for both type of learners based upon requirements, the problem-solving/revision sessions will be organized followed by proper faculty monitoring.

3.2. Activities for slow learners

- Provisions are there in weekly time table by adding extra one hour to conduct problem solving sessions /revision sessions/extra sessions/remedial classes.
- Make up classes and practical sessions are conducted for Direct Second Year (Lateral Entry) Students to complete the syllabus within time.
- Personal attention is provided by respective subject teacher in teaching.
- Extra assignments are given to slow learners and solving the university question papers.
- Question banks are provided.
- Counseling – special hints and techniques

3.3. Activities for Advanced learners

- Advanced assignments or tasks are assigned to advanced learners.
- Encouragement to study through NPTEL courses.
- Encouragement for Participation in Seminars/Conferences/Technical Events.
- Encouragement for Research Papers writing.

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3.4. Performance improvement report of slow learners

- Each faculty member will prepare a report after university result declaration of that semester which shows the improvement in performance of slow learners to close the loop.

4. Roles and Responsibilities of Subject Teacher

- Subject teacher is responsible for carrying out different aspects of slow leaner and advanced learner identification and conducting the above-mentioned activities.

4.1. Responsibilities of Subject Teachers

- Conducting class test/ sessional test of their respective subject.
- Evaluation of class test answer sheets and preparing the class test result report of class
- Preparing and maintaining report for whole class based on parameter decided for assessment of the learning levels of the students with their weightage
- Preparing separate list of slow and advanced learners
- Preparing schedule for extra sessions /problem solving sessions / remedial sessions for slow learners.
- Conducting the sessions for slow learners as per prepared schedule.
- Maintaining the attendance of slow learner's sessions.
- Preparing the list of advanced assignment or list of tasks assigned to advanced learners.
- Preparing the report after university result declaration of current semester which shows the improvement in performance of slow learners to close the loop.
- Maintain the all records for slow learners and advanced learners' activity

4.2. Documents to be maintained by Faculty Member

- Cover page for Slow & Adv. Learners Activity
- Report of result of class test / unit test
- Report of marks obtained based on above parameter
- List of slow learners
- List of Advanced Learners
- Schedule of activity for slow learners
- Attendance record for session conducted for slow learners
- Report of performance improvement for slow learners
- List / Record of tasks given to advanced learners

4.3. Expected Outcome

- Timely conduction of slow learners' activities
- Records based on student progress and observation.
- Improvement in University Result.

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Sample Copy of Identification of Advanced and Slow Learner

18. Result Analysis of CIE-I

Identification of Slow and advance learners
Course: Software Engineering(BECT-403)
Session- 2022-2023 EVEN Semester

SN	Roll No.	NAME	1st Test(30)	Teacher's Assessment (10)	Weightage(Int) 50	Weightage(TA) 50	Total(100)	SLOW,Average &Advance learner
1	2101201010 01	AASHISH PAL	21	8	35	40	75	ADVANCED LEARNER
2	2101201010 02	ABHINAV ANAND	21	8	35	40	75	ADVANCED LEARNER
3	2101201010 04	ABHISHEK KUMAR SINGH	28	8	47	40	87	ADVANCED LEARNER
4	2101201010 04	ABHISHEK RAWAT	29	9	48	45	93	ADVANCED LEARNER
5	2101201010 05	ADARSH KUMAR	27	8	45	40	85	ADVANCED LEARNER
6	2101201010 06	ADITYA MAURYA	23	9	38	45	83	ADVANCED LEARNER
7	2101201010 07	ADNAN MUSTAKEEM KHAN	25	9	42	45	87	ADVANCED LEARNER
8	2101201010 08	ADNAN KAISAR	22	8	37	40	77	ADVANCED LEARNER

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9	210120101009	AGAM SINGH	29	9	48	45	93	ADVANCED LEARNER
10	210120101010	AJAY KUMAR JHA	28	9	47	45	92	ADVANCED LEARNER
11	210120101011	AMIT KUMAR	24	9	40	45	85	ADVANCED LEARNER
12	210120101012	AMIT KUMAR SINHA	23	8	38	40	78	ADVANCED LEARNER
13	210120101013	ANISH KUMAR YADAV	25	9	42	45	87	ADVANCED LEARNER
14	210120101014	ANJANEE KUMARI	28	8	47	40	87	ADVANCED LEARNER
15	210120101015	ANKIT ANAND	29	9	48	45	93	ADVANCED LEARNER
16	210120101016	ANKIT KUMAR	17	8	28	40	68	AVERAGE LEARNER
17	210120101017	ANKIT RAJ	22	8	37	40	77	ADVANCED LEARNER
18	210120101018	ANSH VERMA	24	9	40	45	85	ADVANCED LEARNER
19	210120101019	ANUP RAJ	27	9	45	45	90	ADVANCED LEARNER
20	210120101020	ANURAG CHAUDHARY	25	8	42	40	82	ADVANCED LEARNER
21	210120101021	ANUSHKA KUMARI	27	9	45	45	90	ADVANCED LEARNER
22	210120101022	ARPAN PATHAK	15	8	25	40	65	AVERAGE LEARNER

23	210120101023	ASHISH CHATURBEDI	19	8	32	40	72	AVERAGE LEARNER
24	210120101024	ASHISH SINGH	23	8	38	40	78	ADVANCED LEARNER
25	210120101025	AVANISH RAI	22	8	37	40	77	ADVANCED LEARNER
26	210120101026	AVANTIKA RAWAT	28	8	47	40	87	ADVANCED LEARNER
27	210120101027	AYUSH KUMAR	30	8	50	40	90	ADVANCED LEARNER
28	210120101028	BADAL KUMAR	25	9	42	45	87	ADVANCED LEARNER
29	210120101029	BHAVESH KANOJIA	28	8	47	40	87	ADVANCED LEARNER
30	210120101030	BRIJBHAN SINGH	20	8	33	40	73	AVERAGE LEARNER
31	210120101031	BRIJESH SHARMA	23	8	38	40	78	ADVANCED LEARNER
32	210120101032	BRIJMOHAN PRASAD	24	9	40	45	85	ADVANCED LEARNER
33	210120101033	DAKSHIT BANSAL	28	8	47	40	87	ADVANCED LEARNER
34	210120101034	DEEPANSHU GAHATORI	29	8	48	40	88	ADVANCED LEARNER
35	210120101035	DEEPANSHU PAL	29	8	48	40	88	ADVANCED LEARNER
36	210120101036	DEEPANSHU SHARMA	28	8	47	40	87	ADVANCED LEARNER

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37	210120101037	DHEERAJ KAINTURA	25	8	42	40	82	ADVANCED LEARNER
38	210120101038	DHIRAJ KUMAR	26	8	43	40	83	ADVANCED LEARNER
39	210120101039	FURKAN AHMAD	24	8	40	40	80	ADVANCED LEARNER
40	210120101040	GUL MOHAMMAD	17	9	28	45	73	AVERAGE LEARNER
41	210120101041	HARI SINGH JOSHI	30	9	50	45	95	ADVANCED LEARNER
42	210120101042	HARSH KUMAR	26	8	43	40	83	ADVANCED LEARNER
43	210120101043	HARSHIT JOSHI	21	8	35	40	75	ADVANCED LEARNER
44	210120101044	HARSHIT JOSHI	23	9	38	45	83	ADVANCED LEARNER
45	210120101045	HIMANSHU KUMAR	24	8	40	40	80	ADVANCED LEARNER
46	210120101046	IZAN AHMAD	26	8	43	40	83	ADVANCED LEARNER
47	210120101047	JAIDEEP KUMAR	23	9	38	45	83	ADVANCED LEARNER
48	210120101048	JAINISH KUMAR	20	8	33	40	73	AVERAGE LEARNER
49	210120101049	JANAK RAJ OJHA	25	8	42	40	82	ADVANCED LEARNER
50	210120101050	JISHAN SIDDQUI	26	8	43	40	83	ADVANCED LEARNER

51	210120101051	KABIR BHATT	24	9	40	45	85	ADVANCED LEARNER
52	210120101052	KAFIL ASLAM	23	8	38	40	78	ADVANCED LEARNER
53	210120101053	KESHAV KUMAR	25	9	42	45	87	ADVANCED LEARNER
54	210120101054	KESHAV TOMAR	12	8	20	40	60	SLOW
55	210120101055	KUNAL PRATAP	22	8	37	40	77	ADVANCED LEARNER
56	210120101056	LAKSHIKA KARAKOTI	30	8	50	40	90	ADVANCED LEARNER
57	210120101057	LUV DAGUR	29	8	48	40	88	ADVANCED LEARNER
58	210120101058	MAHESH CHAUDHARY	29	8	48	40	88	ADVANCED LEARNER
59	210120101059	MAYANK CHAUDHARY	24	8	40	40	80	ADVANCED LEARNER
60	210120101060	MOHIT NEGI	26	9	43	45	88	ADVANCED LEARNER
61	210120101061	MOHIT PANT	26	8	43	40	83	ADVANCED LEARNER
62	210120101062	MUSKAN SHARMA	24	9	40	45	85	ADVANCED LEARNER
63	210120101063	NAISHA KASHYAP	28	8	47	40	87	ADVANCED LEARNER
64	210120101064	NEHA BHATT	23	8	38	40	78	ADVANCED LEARNER

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65	210120101065	NEHA RAJ	30	9	50	45	95	ADVANCED LEARNER
66	210120101066	NIKHIL	27	8	45	40	85	ADVANCED LEARNER
67	210120101067	NIRAJ YADAV	26	9	43	45	88	ADVANCED LEARNER
68	210120101068	NISHANT RANJAN	26	8	43	40	83	ADVANCED LEARNER
69	210120101069	NISHAT ARSHI	29	9	48	45	93	ADVANCED LEARNER
70	210120101070	NISHU KUMARI	30	8	50	40	90	ADVANCED LEARNER
71	210120101071	NITIN SINGH	24	8	40	40	80	ADVANCED LEARNER
72	210120101072	PATTAN HAFEEZ	16	8	27	40	67	AVERAGE LEARNER
73	210120101073	PAWNI SINHA	19	8	32	40	72	AVERAGE LEARNER
74	210120101074	PRADEEP KUMAR	24	8	40	40	80	ADVANCED LEARNER
75	210120101075	PRADUMAN JADLI	24	8	40	40	80	ADVANCED LEARNER
76	210120101076	PRASHANT KUMAR	26	8	43	40	83	ADVANCED LEARNER
77	210120101077	PREET KUMAR	28	9	47	45	92	ADVANCED LEARNER
78	210120101078	PRIYANSHU GUPTA	28	8	47	40	87	ADVANCED LEARNER

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79	210120101079	RAHUL KUMAR	27	9	45	45	90	ADVANCED LEARNER
80	210120101080	RAHUL RAJ	29	8	48	40	88	ADVANCED LEARNER
81	210120101081	RAJ CHAUDHARY	16	8	27	40	67	AVERAGE LEARNER
82	210120101082	RAJU PRASAD YADAV	25	8	42	40	82	ADVANCED LEARNER
83	210120101083	RANA VISHAL RAJ	23	8	38	40	78	ADVANCED LEARNER
84	210120101084	RAUNAK RAJ	30	8	50	40	90	ADVANCED LEARNER
85	210120101085	RAVINDRA SINGH	21	8	35	40	75	ADVANCED LEARNER
86	210120101086	RISHABH BHATT	30	8	50	40	90	ADVANCED LEARNER
87	210120101087	RISHIK CHANDRA VERMA	24	8	40	40	80	ADVANCED LEARNER
88	210120101088	ROHIT CHAUDHARY	24	8	40	40	80	ADVANCED LEARNER
89	210120101089	ROHIT KUMAR	28	8	47	40	87	ADVANCED LEARNER
90	210120101090	ROHIT KUMAR	0	8	0	40	40	SLOW
91	210120101091	SACHIN KOLI	28	9	47	45	92	ADVANCED LEARNER
92	210120101092	SAHIL KUMAR THAKUR	26	8	43	40	83	ADVANCED LEARNER

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93	210120101093	SAKSHI PANDEY	24	9	40	45	85	ADVANCED LEARNER
94	210120101094	SAMEER CHAUDHARY	28	8	47	40	87	ADVANCED LEARNER
95	210120101095	SANCHI AGARWAL	30	9	50	45	95	ADVANCED LEARNER
96	210120101096	SANJEEVNI	0	6	0	30	30	SLOW
97	210120101097	SARTHAK SAHNI	24	8	40	40	80	ADVANCED LEARNER
98	210120101098	SATYAM JAIN	30	9	50	45	95	ADVANCED LEARNER
99	210120101099	SAURABH SUMAN	0	8	0	40	40	SLOW
100	210120101100	SAURAV SANDILYA	24	8	40	40	80	ADVANCED LEARNER
101	210120101101	SHASHWAT SHEKHAR	26	8	43	40	83	ADVANCED LEARNER
102	210120101102	SHASWAT SINGH	23	6	38	30	68	AVERAGE LEARNER
103	210120101103	SHEKHAR KUMAR	22	8	37	40	77	ADVANCED LEARNER
104	210120101104	SHIKHA VERMA	29	8	48	40	88	ADVANCED LEARNER
105	210120101105	SHIRVYA BHARDWAJ	28	8	47	40	87	ADVANCED LEARNER
106	210120101106	SHIVAM	21	8	35	40	75	ADVANCED LEARNER

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107	210120101107	SHIVAM BARANWAL	30	9	50	45	95	ADVANCED LEARNER
108	210120101108	SHREYA SHRIVASTAVA	28	8	47	40	87	ADVANCED LEARNER
109	210120101109	SHUBHAM PAINULY	23	9	38	45	83	ADVANCED LEARNER
110	210120101110	SHUMAIL RAHAT KAHN	24	8	40	40	80	ADVANCED LEARNER
111	210120101111	SOVIT CHAUDHARY	29	8	48	40	88	ADVANCED LEARNER
112	210120101112	SRIJAN KUMAR	0	8	0	40	40	SLOW
113	210120101113	SUGANDH KUMARI	24	8	40	40	80	ADVANCED LEARNER
114	210120101114	SUMIT RAWAT	28	8	47	40	87	ADVANCED LEARNER
115	210120101115	SUPRIYA YADAV	22	8	37	40	77	ADVANCED LEARNER
116	210120101116	SURAJ CHAUDHARY	27	8	45	40	85	ADVANCED LEARNER
117	210120101117	SWADESH KUMAR	0	8	0	40	40	SLOW
118	210120101118	TEJAS KUMAR	28	8	47	40	87	ADVANCED LEARNER
119	210120101119	TRIPTI PAL	27	9	45	45	90	ADVANCED LEARNER
120	210120101120	UTKARSH KUMAR	28	8	47	40	87	ADVANCED LEARNER

Vision
- To emerge as an academic centre producing world class professionals

Mission:
- Promote intellectual and skilled human capital generation employment and entrepreneurship.
- Be educational centre of excellence of multi ethnicity and diversity.
- Establish as technology driven teaching learning institution

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121	210120101121	VIKRAM KUMAR GANJHU	20	8	33	40	73	AVERAGE LEARNER
122	210120101122	VISHAL PARMAR	23	8	38	40	78	ADVANCED LEARNER
123	210120101123	VISHWESH CHATURVEDI	26	8	43	40	83	ADVANCED LEARNER
124	210120101124	YASH GOYAL	28	8	47	40	87	ADVANCED LEARNER
125	210120101125	YASHASWI ARYAN	23	9	38	45	83	ADVANCED LEARNER
126	720120101002	ABHISHEK KUMAR	29	8	48	40	88	ADVANCED LEARNER
127	720120101003	ADITYA SINGH	0	8	0	40	40	SLOW
128	720120101004	AMAN CHAURASIYA	26	8	43	40	83	ADVANCED LEARNER
129	720120101006	ARYA BANDHU	30	8	50	40	90	ADVANCED LEARNER
130	720120101007	AYUSH KUMAR	25	8	42	40	82	ADVANCED LEARNER
131	720120101008	CHANDRASHEKHAR KUMAR	28	8	47	40	87	ADVANCED LEARNER
132	720120101010	DEEPAK KUMAR	29	8	48	40	88	ADVANCED LEARNER
133	720120101011	GEETESH KUMAR	25	8	42	40	82	ADVANCED LEARNER
134	720120101012	HIMANGSHU HAZARIKA	24	6	40	30	70	AVERAGE LEARNER

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135	720120101013	HIMANSHU SINGH	23	8	38	40	78	ADVANCED LEARNER
136	720120101014	JAYANT RAWAT	23	8	38	40	78	ADVANCED LEARNER
137	720120101015	KRITI RANI SINGH	23	8	38	40	78	ADVANCED LEARNER
138	720120101016	KUNAL	0	6	0	30	30	SLOW
139	720120101017	MANISH KUMAR	27	8	45	40	85	ADVANCED LEARNER
140	720120101018	MUKUL RUHELA	26	7	43	35	78	ADVANCED LEARNER
141	720120101019	NANDNI SHARMA	17	8	28	40	68	AVERAGE LEARNER
142	720120101020	POURUSH SIDDHARTH	24	8	40	40	80	ADVANCED LEARNER
143	720120101022	RAHUL KUMAR	24	8	40	40	80	ADVANCED LEARNER
144	720120101023	RAJNIKANT KUMAR	20	8	33	40	73	AVERAGE LEARNER
145	720120101024	RAKESH KUMAR	24	8	40	40	80	ADVANCED LEARNER
146	720120101025	RAVI KUMAR GUPTA	21	8	35	40	75	ADVANCED LEARNER
147	720120101027	RAVIKANT KUMAR	23	8	38	40	78	ADVANCED LEARNER
148	720120101028	RITESH KUMAR	23	9	38	45	83	ADVANCED LEARNER

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149	720120101029	ROHAN BHATIA	23	8	38	40	78	ADVANCED LEARNER
150	720120101030	SACHIN PANWAR	19	9	32	45	77	ADVANCED LEARNER
151	720120101031	SHIVAM KUMAR	21	8	35	40	75	ADVANCED LEARNER
152	720120101032	SHIVANGI PANT	25	9	42	45	87	ADVANCED LEARNER
153	720120101033	SHIVANI	22	8	37	40	77	ADVANCED LEARNER
154	720120101036	SHRESTH MATHPAL	19	7	32	35	67	AVERAGE LEARNER
155	720120101037	SHUDHANSHU KUMAR	25	8	42	40	82	ADVANCED LEARNER
156	720120101038	SIDDHARTH VERMA	24	8	40	40	80	ADVANCED LEARNER
157	720120101039	SUMIT KUMAR	29	9	48	45	93	ADVANCED LEARNER
158	720120101040	SUMIT RAWAT	17	8	28	40	68	AVERAGE LEARNER
159	720120101041	SUSHANT KUMAR	30	8	50	40	90	ADVANCED LEARNER
160	720120101043	TARUN KUMAR	0	8	0	40	40	SLOW
161	720120101044	VAIBHAV SINGH	21	9	35	45	80	ADVANCED LEARNER

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Department of Computer Science and Engineering

07/04/2023

NOTICE

All students are hereby informed that the department has decided to schedule "Excel Classes" for **Slow Learner/Average/Advanced Learner** category students which will help them provide additional support and assistance tailored to your learning needs.

Your participation in these classes is highly encouraged as they are intended to assist you in reaching your full potential.

These classes will be conducted on according to the below schedule. Your presence is compulsory for these classes.

Time/Date	I 9:40 AM-10:30 AM	II 10:30 AM-11:20 AM	III 11:30 AM-12:20 PM	IV 12:20 PM-01:10 PM
15/04/2023	BECT-403	BECT-403	BECT-403	BECT-403
22/04/2023	BECT-403	BECT-403	BECT-403	BECT-403
28/04/2023	BECT-403	BECT-403	BECT-403	BECT-403
29/04/2023	BECT-403	BECT-403	BECT-403	BECT-403

Regards
Faculty Coordinator

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Tula's Institute, Dehradun

Excel classes of Slow Learner (Sessional 1)

S.No	University Roll No	Student Name	15/04/2023	22/04/2023	28/04/2023	29/04/2023
1	210120101054	KESHAV TOMAR	P	P	P	P
2	210120101090	ROHIT KUMAR	P	P	P	P
3	210120101096	SANJEEVNI	P	P	A	P
4	210120101099	SAURABH SUMAN	P	P	P	P
5	210120101112	SRIJAN KUMAR	P	P	A	P
6	210120101117	SWADESH KUMAR	P	P	P	P
7	720120101003	ADITYA SINGH	P	P	A	A
8	720120101016	KUNAL	P	P	P	P
9	720120101043	TARUN KUMAR	P	A	A	P
10	210120101054	KESHAV TOMAR	P	P	P	P
11	210120101090	ROHIT KUMAR	P	P	A	P
12	210120101099	SAURABH SUMAN	P	P	P	P
13	210120101112	SRIJAN KUMAR	P	P	P	P
14	210120101117	SWADESH KUMAR	P	P	P	P
15	720120101003	ADITYA SINGH	A	A	A	P
16	720120101016	KUNAL	P	A	P	P
17	720120101043	TARUN KUMAR	P	P	P	A
18	210120101054	KESHAV TOMAR	P	A	P	P
19	210120101090	ROHIT KUMAR	P	P	P	P
Total No of Students Present			**18**	**16**	**14**	**17**
Total No of Students Absent			**01**	**03**	**05**	**02**

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Excel classes of Average Learner (Sessional 1)

S.No	University Roll No	Student Name	15/04/2023	22/04/2023	28/04/2023	29/04/2023
1	210120101016	ANKIT KUMAR	P	P	P	P
2	210120101022	ARPAN PATHAK	P	P	P	P
3	210120101023	ASHISH CHATURBEDI	P	P	P	P
4	210120101030	BRIJBHAN SINGH	P	P	P	P
5	210120101040	GUL MOHAMMAD	P	P	P	P
6	210120101048	JAINISH KUMAR	P	P	P	P
7	210120101072	PATTAN HAFEEZ	P	P	P	P
8	210120101073	PAWNI SINHA	P	P	P	P
9	210120101081	RAJ CHAUDHARY	P	P	P	P
10	210120101102	SHASWAT SINGH	P	P	P	P
11	210120101121	VIKRAM KUMAR GANJHU	P	P	P	P
12	720120101012	HIMANGSHU HAZARIKA	P	P	P	P
13	720120101019	NANDNI SHARMA	P	P	P	P
14	720120101023	RAJNIKANT KUMAR	P	P	P	P
15	720120101036	SHRESTH MATHPAL	P	P	P	P
16	720120101040	SUMIT RAWAT	A	P	A	P
	Total No of Students	**PRESENT**	**15**	**16**	**15**	**16**
		ABSENT	**01**	**0**	**01**	**0**

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Assignments for Advance Learner

Assignment No 1

Given Date: 15/04/23 Submission Date: 24/04/23

Question No.	Questions
1.	Analyze the implications of the software crisis on the evolution of software engineering. How have past challenges influenced current methodologies and practices? [CO4, CO5, L4]
2.	Consider a scenario where a software project is behind schedule and over budget. How would you apply elements of the Iterative Model to restructure the project plan and regain momentum? [CO4, CO5, L5]

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Assignment No 2

Given Date: 22/04/23 Submission Date: 27/04/23

Question No.	Questions
1.	Describe the Function Point (FP) based estimation approach. How does it help in estimating the size and effort required for a software project? [L5, CO4, CO5]

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Assignment No 3

Given Date: 27/04/23 Submission Date: 28/04/23

Question No.	Questions
1.	As a software architect, you're responsible for creating a data flow diagram (DFD) for a new inventory management system. Apply the DFD notation to represent the flow of data between various system components, including inputs, processes, and outputs. [CO3, CO4, CO5, L3]

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Assignment No 4

Given Date: 28/04/23 Submission Date: 29/04/23

Question No.	Questions
1.	Analyze the impact of control hierarchy on system design and development. How does a clear control hierarchy enhance system manageability and understandability? [CO4, CO5, L4]
2.	Imagine you are developing a unit test suite for a function that calculates the total price of items in a shopping cart. Outline the steps you would take to design and execute these unit tests, ensuring comprehensive coverage. [CO3, CO4, CO5, L5]

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Assignment No 5

Given Date: 29/04/23 Submission Date: 30/04/23

Question No.	Questions
1.	Suppose you're responsible for implementing software quality assurance activities for a new software release. How would you apply SQA activities to ensure that the software meets predefined quality standards and requirements? [CO4, CO5, L3]
2	Imagine you're conducting an audit of software quality assurance practices in your organization. How would you apply your knowledge of quality concepts to assess the effectiveness of existing SQA processes? [L3, CO4, CO5]

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Subject Name with Code: Software Engineering(BECT-403) **Time Duration:** 90mts
Program/Branch/Year: B.Tech/CSE/2nd year **Maximum Marks:** 30

Q No.1 Attempt all. (1 X 6 =6)

a) The_____model helps in representing the system's dynamic behaviour. (CO3) (L1)
   a) Object Model
   b) Context Model
   c) Behavioural Model
   d) Data Model

b) Which of the following word correctly summarized the importance of software design? (CO4) (L1)
   a) Quality
   b) Complexity
   c) Efficiency
   d) Accuracy

c) What does a data store symbol in the Data Flow Diagram signify? (CO5) (L1)
   a) Logical File
   b) Physical File
   c) Data Structure
   d) All of the above

d) What is a Functional Requirement? (CO3) (L1)
   a) specifies the tasks the program must complete
   b) specifies the tasks the program should not complete
   c) specifies the tasks the program must not work
   d) All of the mentioned

e) Quality Management is known as _____ (CO4) (L1)
   a) SQI
   b) SQA
   c) SQM
   d) SQA and SQM

f) When can white-box testing be started? (CO5) (L1)
   a) After SRS creation
   b) After installation
   c) After Programming
   d) After Designing

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(4 X 3 =12)

Q No.2 Attempt all.

a) Explain the different tasks of Requirement Engineering. (CO3) (L2)

OR

Discuss the System model with its anyone model. (CO3) (L2)

b) What do you mean by SRS? Explain its format. (CO4) (L2)

OR

What is data flow diagram? Give a suitable example. (CO4) (L2)

c) Differentiate between Verification and Validation. (CO5) (L2)

OR

Explain the concept of coupling and cohesion in software Design. (CO5) (L2)

Q No.3 Attempt all. **(4 X 3 =12)**

a) Compare and Contrast between Black box and White box testing with example. (CO3) (L2)

OR

Discuss the term Quality and Quality assurance and its characteristics. (CO3) (L2)

b) Describe any four Design Concepts. (CO4) (L2)

OR

What do you mean by Dynamic Testing? Explain any one of its types. (CO4) (L2)

c) What do you understand by the ISO/IEC 9126 standard? Briefly Explain them. (CO5) (L2)

OR

Explain the process maturity levels in CMM. (CO5) (L2)

Identification of Slow and Advance Learners

Course: B.Tech CSE I Year

Course Title: Introduction to Engineering Mathematics (AHT-003)

Slow /Average / Advance Learner Identification (Sessional 1)

S.No	University Roll No.	Student Name	Sessional 1	Assignment (10)	Sessional out of 50	Assignment out of 50	Total (100)	Slow or Advance 1
1	220120101001	Aadarsh karna	22	8	37	40	77	Advanced Learner
2	220120101002	Aakash	22	8	37	40	77	Advanced Learner
3	220120101003	AANCHAL CHANDRAVANSHI	30	10	50	50	100	Advanced Learner
4	220120101004	Abhay Saxena	30	9	50	45	95	Advanced Learner
5	220120101005	Abhay Yadav	19	9	32	45	77	Advanced Learner
6	220120101006	ABHINAV KUMAR SINGH	18	7	30	35	65	Average Learner
7	220120101007	ABHINAV SINGH	26	9	43	45	88	Advanced Learner
8	220120101008	ABHINAV SINGHAL	28	9	47	45	92	Advanced Learner
9	220120101009	ABHISHEK MAURYA	14	9	23	45	68	Average Learner
10	220120101010	ABHISHEK PAL	30	7	50	35	85	Advanced Learner
11	220120101011	Abhishek Rawat	23	9	38	45	83	Advanced Learner
12	220120101012	ABU AAMIR	16	8	27	40	67	Average Learner
13	220120101013	Aditya Kumar	13	8	22	40	62	Slow Learner
14	220120101014	Aditya Raj	8	9	13	45	58	Slow Learner
15	220120101015	ADITYA SHARMA	30	10	50	50	100	Advanced Learner
16	220120101016	Aditya Singh	25	9	42	45	87	Advanced Learner
17	220120101017	AKANKSHA CHAUHAN	30	10	50	50	100	Advanced Learner
18	220120101018	AKASH KUMAR	28	8	47	40	87	Advanced Learner
19	220120101019	AKASH KUMAR	25	9	42	45	87	Advanced Learner
20	220120101020	AKASH KUMAR RAI	21	7	35	35	70	Average Learner
21	220120101021	AKRITI KUMARI	14	9	23	45	68	Average Learner
22	220120101022	Akshay Kumar	6	9	10	45	55	Slow Learner
23	220120101023	ALOK	18	7	30	35	65	Average Learner

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24	220120101024	ALOK KASHYAP	17	9	28	45	73	Average Learner
25	220120101025	AMAN KUMAR SINGH	11	7	18	35	53	Slow Learner
26	220120101026	Aman Singh	19	9	32	45	77	Advanced Learner
27	220120101027	AMAN SINGH RAWAT	25	7	42	35	77	Advanced Learner
28	220120101028	AMAN SINGH RAWAT	16	8	27	40	67	Average Learner
29	220120101029	AMRESH KUMAR NIRALA	15	9	25	45	70	Average Learner
30	220120101030	ANAS EJAZ KHAN	15	8	25	40	65	Average Learner
31	220120101031	ANIKET ADARSH	25	9	42	45	87	Advanced Learner
32	220120101032	Anirban sow	11	8	18	40	58	Slow Learner
33	220120101033	ANKIT KUMAR BHAGAT	30	10	50	50	100	Advanced Learner
34	220120101034	Ankit Raj Sharma	7	8	12	40	52	Slow Learner
35	220120101035	ANKRITI KARN	30	10	50	50	100	Advanced Learner
36	220120101036	ANSH	12	8	20	40	60	Slow Learner
37	220120101037	ANSHUL CHAUHAN	14	9	23	45	68	Average Learner
38	220120101038	ANSHUL RAWAT	30	10	50	50	100	Advanced Learner
39	220120101039	ANURAG SINGH	10	9	17	45	62	Slow Learner
40	220120101040	Arabin prasad Chauhan	12	9	20	45	65	Average Learner
41	220120101041	ARJUN DEVBRAT	10	8	17	40	57	Slow Learner
42	220120101042	Arnim Bhardwaj	30	9	50	45	95	Advanced Learner
43	220120101043	ARPIT SHARMA	13	8	22	40	62	Slow Learner
44	220120101044	ARYAN KUMAR	30	10	50	50	100	Advanced Learner
45	220120101045	ARYAN MITTAL	30	9	50	45	95	Advanced Learner
46	220120101046	Ashish kumar	11	9	18	45	63	Slow Learner
47	220120101047	Ashish kumar singh	13	9	22	45	67	Average Learner
48	220120101048	ASHISH RAJ	11	9	18	45	63	Slow Learner
49	220120101049	Avdesh Chamoli	18	8	30	40	70	Average Learner
50	220120101050	Avnish singh chauhan	11	9	18	45	63	Slow Learner
51	220120101051	AYUSH KUMAR	10	8	17	40	57	Slow Learner

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52	220120101052	AYUSH RANA	24	9	40	45	85	Advanced Learner
53	220120101053	AYUSH TYAGI	10	8	17	40	57	Slow Learner
54	220120101054	Bilal Ahmad	13	9	22	45	67	Average Learner
55	220120101055	Bittu Kumar	25	8	42	40	82	Advanced Learner
56	220120101056	Deepak Sharma	12	9	20	45	65	Average Learner
57	220120101057	Deepanshu Rana	25	8	42	40	82	Advanced Learner
58	220120101058	DEVANSH INDOLIYAN	25	9	42	45	87	Advanced Learner
59	220120101059	Devanshu Purohit	27	8	45	40	85	Advanced Learner
60	220120101060	Dhruv Chaudhary	15	9	25	45	70	Average Learner
61	220120101061	Dhruv Dogra	30	10	50	50	100	Advanced Learner
62	220120101062	Dipendra Singh kalura	19	9	32	45	77	Advanced Learner

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Remedial classes of Slow Learner (Sessional 1)

S.No	University Roll No	Student Name	16/11/22	17/11/22	23/11/22	24/11/22
1	220120101014	Aditya Raj	P	P	P	P
2	220120101025	AMAN KUMAR SINGH	P	P	P	P
3	220120101032	Anirban sow	A	A	P	A
4	220120101034	Ankit Raj Sharma	P	P	P	P
5	220120101051	AYUSH KUMAR	P	P	P	A
6	220120101053	AYUSH TYAGI	P	P	P	P

Total No of Students Present (Column wise)- 05 05 06 04

Total No of Students Absent (Column wise)-- 01 01 00 02

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TULA'S DEHRADUN Estd. 2006

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Affiliated: ×VMSB Uttarakhand Technical University × Sri Dev Suman Uttarakhand University × Uttarakhand Board of Technical Education

Assignments for Slow Learner

Assignment No 1

Given Date: 16/11/22 Submission Date: 21/11/22

Question No.	Questions
1.	The system of equations $x + y + z = 6;$ $x + 4y + 6z = 20;$ $x + 4y + \lambda z = \mu$ has NO solution for values of λ and μ given by 1. $\lambda = 6, \mu = 20$ 2. $\lambda = 6, \mu \neq 20$ 3. $\lambda \neq 6, \mu = 20$ 4. $\lambda \neq 6, \mu \neq 20$
2.	Two matrices A and B are given below: $A = \begin{bmatrix} p & q \\ r & s \end{bmatrix}; \quad B = \begin{bmatrix} p^2+q^2 & pr+qs \\ pr+qs & r^2+s^2 \end{bmatrix}$ If the rank of matrix A is N, then the rank of matrix B is 1. N/2 2. N – 1 3. N 4. 2 N

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Assignment 2

Given Date: 17/11/22

Submission Date: 24/11/22

Question No.	Questions
1.	The range of values of k for which the function $f(x) = (k^2 - 4)x^2 + 6x^3 + 8x^4$ has a local maxima at point $x = 0$ is Close 1. $k < -2$ or $k > 2$ 2. $k \le -2$ or $k \ge 2$ 3. $-2 < k < 2$ 4. $-2 \le k \le 2$

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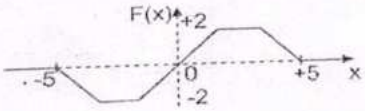
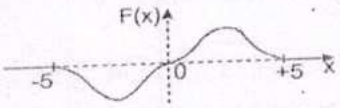
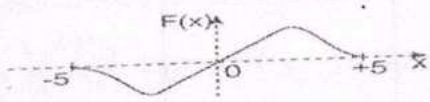
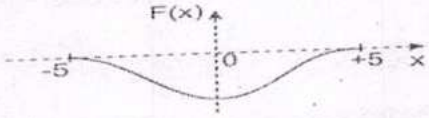
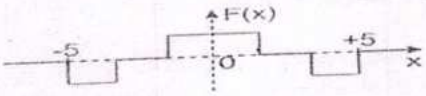
Assignment No 3

Given Date: 23/11/22 **Submission Date:** 28/11/22

Question No.	Questions
1.	Consider the plot of f(x) versus x as shown below.  Suppose $F(x) = \int_{-5}^{x} f(y)dy$. Which one of the following is a graph of F(x)?  1.  2.  3.  4.

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Assignment No 4

Given Date: 24/11/22

Submission Date: 8-0/11/22

Question No.	Questions
1.	A function f (x) is defined as $f(x) = \begin{cases} e^x, & x < 1 \\ \ln x + ax^2 + bx, & x \geq 1 \end{cases}$ where x ϵ R. Which one of the following statements is TRUE? 1. f(x) is NOT differentiable at x = 1 for any values of a and b 2. f(x) is differentiable at x = 1 for the unique value of a and b. 3. f(x) is differentiable at x = 1 for all values of a and b such that a + b = e 4. f(x) is differentiable at x = 1 for all values of a and b.

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Solution of Assignment
Assignment 1

Answers (1)

The augmented matrix for the system of equations is

$$[A|B] = \left[\begin{array}{ccc|c} 1 & 1 & 1 & 6 \\ 1 & 4 & 6 & 20 \\ 1 & 4 & \lambda & \mu \end{array}\right]$$

Performing: $R_3 \to R_3 - R_2$

$$[A|B] = \left[\begin{array}{ccc|c} 1 & 1 & 1 & 6 \\ 1 & 4 & 6 & 20 \\ 0 & 0 & \lambda - 6 & \mu - 20 \end{array}\right] \quad \ldots$$

If $\lambda = 6$ and $\mu \neq 20$ then

Rank (A | B) = 3 and Rank (A) = 2

$\because$ Rank (A | B) $\neq$ Rank (A)

$\therefore$ Given the system of equations has no solution for $\lambda = 6$ and $\mu \neq 20$

Concept:

The number of solutions can be determined by finding out the rank of the Augmented matrix and the rank of the Coefficient matrix.

- If rank(Augmented matrix) = rank(Coefficient matrix) = no. of variables then no of solutions = 1.
- If rank(Augmented matrix) $\neq$ rank(Coefficient matrix) then no of solutions = 0.
- If rank(Augmented matrix) = rank(Coefficient matrix) < no. of variables, no of solutions = infinite.

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Answers (2)

Concept:

The order of highest ordered non zero minor is called the **rank of a matrix.**

Example:

If the square matrix is of order n × n then find the determinant of it if the value is **non zero then its rank is n** if the value comes out to be zero then find the determinant of (n - 1) order of all sub-matrix if **the value comes out to be non zero of any sub-matrix then the rank is n** if the value is zero then the same processes continues further and the order at which value of the determinant is non zero is **the rank of a matrix, Use this concept only for order 3 × 3 or lower order for more than 3 × 3 order we use the concept of Echelon form matrix.**

Calculation:

The determinant of A is, $|A| = ps - qr$

Determinant of B is, $|B| = (p^2 + q^2)(r^2 + s^2) - (pr + qs)^2$

$|B| = (p^2s^2 + q^2r^2 - 2pqrs)$

$|B| = (ps - qr)^2$

Now, it is clear that $|A|^2 = |B|$

If the rank of A, $\rho(A) = 1$, that means the determinant of the matrix is zero, and hence the determinant of the matrix also zero. Therefore, the rank of the matrix B is 1

If the rank of A, $\rho(A) = 2$, that means the determinant of the matrix is non-zero, and hence the determinant of the matrix also non-zero. Therefore, the rank of the matrix B is 2.

Therefore, $\rho(B) = \rho(A) = N$

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Assignment 2

Answers (1)

Concept:

Consider a function y = f(x) on a defined interval of x.

The function attains extreme values (the value can be maximum or minimum or both).

For maxima:

- **Local maxima:** A point is the local maxima of a function if there is some other point where the maximum value is greater than the local maxima but that point doesn't exist nearby the local maxima.
- **Global maxima:** It is the point where there is no other point has in the domain for which function has more value than global maxima.

Condition:

$f''(x) < 0 \Rightarrow$ maxima

$f''(x) > 0 \Rightarrow$ minima

$f''(x) = 0 \Rightarrow$ Point of inflection

Calculation:

Given:

$f(x) = (k^2 - 4)x^2 + 6x^3 + 8x^4$

$f'(x) = 2(k^2 - 4)x + 18x^2 + 32x^3$

$f''(x) = 2(k^2 - 4) + 36x + 96x^2$

Since, at x = 0, f(x) has local maxima

$f''(0) < 0$

$2(k^2 - 4) + 36 \times 0 + 96 \times 0 < 0$

$k^2 - 4 < 0$

Here, to keep the above expression less than 0, the value of k must lie in between -2 to 2.

$\Rightarrow -2 < k < 2$

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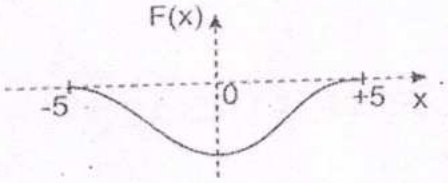
Assignment 3

Answers (1)



Option 3 :

GATE Calculus Questions Question 4 Detailed Solution

Concept:

The integration of Ramp is parabolic, i.e.

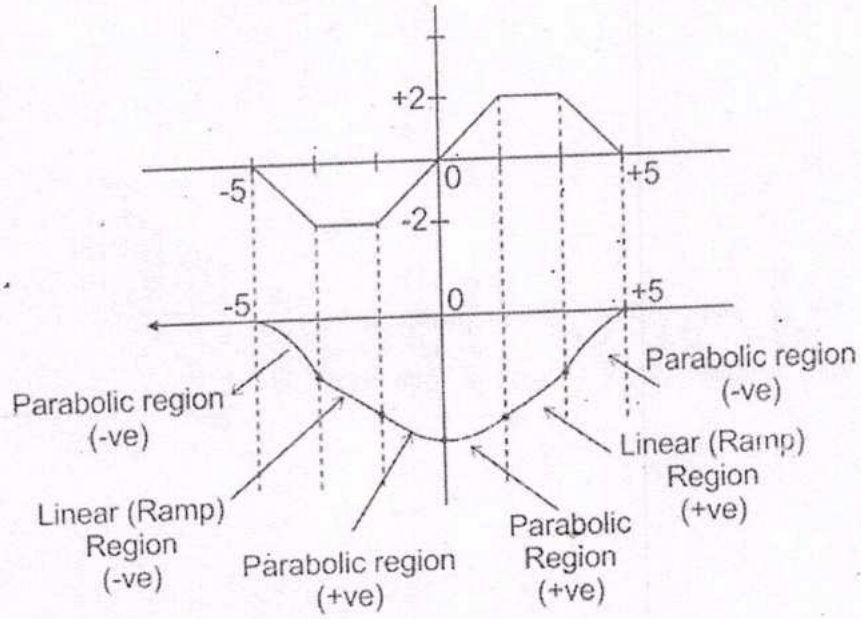
$\int \frac{1}{t} dt = \frac{1}{t^2}$

Similarly, the integration of a step function is a Ramp, i.e.

$\int Au(t)dt = \int Adt = At$

Applications:

The resultant plot will be as shown:



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Assignment 4

Answers (1)

Concept:

A function is said to be differentiable at x =a if,

Left derivative = Right derivative = Well defined

Analysis:

$$f(x) = \begin{cases} e^x, & x < 1 \\ \log x + ax^2 + bx, & x \geq 1 \end{cases}$$

Taking Differentiation,

$$f'(x) = \begin{cases} e^x, & x < 1 \\ \frac{1}{x} + 2ax + b, & x \geq 1 \end{cases}$$

f'(1) = e, x < 1

f' (1) = 1 + 2a + b, x ≥ 1

since f(x) is differentiable at x = 1,

e = 1 + 2a + b → (1)

At x = 1,

f(1) = e, x < 1

f(1) = a + b, x ≥ 1

since f(x) is continuous at x = 1,

e = a + b → (2)

From (1) and (2)

⇒ 1 + 2a + b = a + b

⇒ a = -1

⇒ b = e + 1

f(x) is differentiable at x = 1 for the unique values of a and b.

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Competitive Exam Module for Advance Learners

The purpose of this programme is to test advanced learner students' knowledge and understanding of their undergraduate level mathematics. The following are the topics under mathematics for Graduate Aptitude Test in Engineering.

Section 1: Calculus

- Functions of two or more variables, continuity, directional derivatives, partial derivatives, total derivative, maxima and minima, saddle point, method of Lagrange's multipliers.
- Double and Triple integrals and their applications to area, volume, and surface area; Vector Calculus: gradient, divergence and curl, Line integrals and Surface integrals, Green's theorem, Stokes' theorem, and Gauss divergence theorem.

Section 2: Linear Algebra

- Finite dimensional vector spaces over real or complex fields; Linear transformations and their matrix representations, rank, and nullity; systems of linear equations, characteristic polynomial, eigenvalues and eigenvectors, diagonalization, minimal polynomial
- Cayley-Hamilton Theorem, Finite dimensional inner product spaces, Gram-Schmidt orthonormalization process, symmetric, skew-symmetric
- Hermitian, skew-Hermitian, normal, orthogonal, and unitary matrices; diagonalization by a unitary matrix, Jordan canonical form; bilinear and quadratic forms.

Section 3: Complex Analysis

- Functions of a complex variable: continuity, differentiability, analytic functions, harmonic functions; Complex integration: Cauchy's integral theorem and formula
- Liouville's theorem, maximum modulus principle, Morera's theorem; zeros and singularities; Power series, radius of convergence
- Taylor's series and Laurent's series; Residue theorem and applications for evaluating real integrals; Rouche's theorem, Argument principle, Schwarz lemma; Conformal mappings, Mobius transformations.

Section 4: Ordinary Differential equations

- First order ordinary differential equations, existence and uniqueness theorems for initial value problems, linear ordinary differential equations of higher order with constant coefficients.
- Second order linear ordinary differential equations with variable coefficients; Cauchy-Euler equation, method of Laplace transforms for solving ordinary differential equations, series solutions (power series, Frobenius method); Legendre and Bessel functions and their orthogonal properties; Systems of linear first order ordinary differential equations.

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- Sturm's oscillation and separation theorems, Sturm-Liouville eigenvalue problems, Planar autonomous systems of ordinary differential equations: Stability of stationary points for linear systems with constant coefficients, Linearized stability, Lyapunov functions.

Section 5: Algebra

- Groups, subgroups, normal subgroups, quotient groups, homomorphisms, automorphisms; cyclic groups, permutation groups, Group action, Sylow's theorems and their applications; Rings, ideals, prime and maximal ideals, quotient rings, unique factorization domains.
- Principal ideal domains, Euclidean domains, polynomial rings, Eisenstein's irreducibility criterion; Fields, finite fields, field extensions, algebraic extensions, algebraically closed fields.

Section 8: Numerical Analysis

- Systems of linear equations: Direct methods (Gaussian elimination, LU decomposition, Cholesky factorization), Iterative methods (Gauss-Seidel and Jacobi) and their convergence for diagonally dominant coefficient matrices; Numerical solutions of nonlinear equations: bisection method, secant method, Newton-Raphson method, fixed point iteration; Interpolation
- Lagrange and Newton forms of interpolating polynomial, Error in polynomial interpolation of a function; Numerical differentiation and error.
- Numerical integration: Trapezoidal and Simpson rules, Newton-Cotes integration formulas, composite rules, mathematical errors involved in numerical integration formulae; Numerical solution of initial value problems for ordinary differential equations: Methods of Euler, Runge-Kutta method of order 2.

Section 9: Partial Differential Equations

- Method of characteristics for first order linear and quasilinear partial differential equations; Second order partial differential equations in two independent variables: classification and canonical forms, method of separation of variables for Laplace equation in Cartesian and polar coordinates, heat and wave equations in one space variable
- Wave equation: Cauchy problem and d'Alembert formula, domains of dependence and influence, non-homogeneous wave equation; Heat equation: Cauchy problem; Laplace and Fourier transform methods.

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MCQ for Advance learners

1. Let $y = f(x)$ be a function, where $a \le x \le b$, and revolved about y-axis, then surface area of generated solid:

(a) $S = \int_a^b 2\pi y \sqrt{1+\left(\frac{dy}{dx}\right)^2}\, dx$ (b) $S = \int_a^b 2\pi x \sqrt{1+\left(\frac{dx}{dy}\right)^2}\, dy$

(c) $S = \int_a^b 2\pi y \sqrt{1+\left(\frac{dy}{dx}\right)^2}\, dy$ (d) $S = \int_a^b 2\pi x \sqrt{1+\left(\frac{dy}{dx}\right)^2}\, dx$

2. Gamma function Γn is:

(a) $\int_0^\infty e^{-x} x^n dx$ (b) $\int_0^\infty e^{x} x^{n-1} dx$ (c) $\int_0^\infty e^{-x} x^{n-1} dx$ (d) $\int_0^\infty e^{x} x^{n+1} dx$

3. The value of integral $\int_0^2 \int_1^3 \int_1^2 xy^2 z\, dx dy dz$ is equal to:

(a) 22 (b) 26 (c) 5 (d) 25

4. What is the relation between Beta and Gamma functions?

(a) $\beta(m,n) = \frac{\Gamma m \Gamma n}{\Gamma m+n}$ (b) $\beta(m,n) = \frac{\Gamma m + \Gamma n}{\Gamma m+n}$ (c) $\beta(m,n) = \frac{\Gamma m+n}{\Gamma m \Gamma n}$ (d) $\beta(m,n) = \frac{(\Gamma m)^2}{\Gamma m+n}$

5. A vector point function $\overline{V}$ is solenoidal if:

(a) $\overline{V} = 0$ (b) $grad\left|\overline{V}\right| = 0$ (c) $div\overline{V} = 0$ (d) $curl\overline{V} = 0$

6. A unit normal $x^2+y^2+z^2=5$ at (0, 1, 2) is equal to:

(a) $\frac{1}{\sqrt{5}}\left(\hat{i}+\hat{j}+\hat{k}\right)$ (b) $\frac{1}{\sqrt{5}}\left(\hat{i}+\hat{j}-\hat{k}\right)$ (c) $\frac{1}{\sqrt{5}}\left(\hat{i}+2\hat{k}\right)$ (d) $\frac{1}{\sqrt{5}}\left(\hat{i}-\hat{j}+\hat{k}\right)$

7. $div\left(curl\overline{V}\right)$ for every vector field is:

(a) 0 (b) 1 (c) 2 (d) Not possible

8. The statement of Stoke's theorem is:

(a) $\oint_C \overline{F}.\overline{dr} = \iint_S curl\overline{F}.\hat{n}ds$ (b) $\iint_S \overline{F}.\hat{n}ds = \iiint_V div\overline{F}dv$

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(c) $\oint_C (f_1 dx + f_2 dy) = \iint_R \left(\frac{\partial f_2}{\partial x} - \frac{\partial f_1}{\partial y} \right) dx dy$ (d) $\oint_C \overline{F}.\overline{dr} = \iint_S grad\left|\overline{F}\right|.\hat{n}ds$

9. If $A = \begin{bmatrix} 3 & 0 \\ 8 & -1 \end{bmatrix}$, then the Eigen values of A^{25} are:

(a) $2^{25}, 1$ (b) $8^{25}, 3$ (c) $4^{25}, -3$ (d) $3^{25}, -1$

10. The product of all Eigen values of a non-singular matrix A is equal to:
(a) trace of A (b) always a positive integer (c) determinant of A (d) always a negative integer

11. The condition for consistency of simultaneous equation AX=B is:
(a) Rank A = Rank B (b) Rank A = Rank C (c) Rank A ≠ Rank C (d) none of these

12. The rank of matrix $\begin{bmatrix} \mu & -1 & 0 \\ 0 & \mu & -1 \\ -1 & 0 & \mu \end{bmatrix}$ is 2, for μ is equal to:

(a) 1 (b) 2 (c) 3 (d) any real number

13. A point where a function is neither maximum nor minimum:
(a) Disconnected point (b) Null point (c) Saddle point (d) Black point

14. If $u = e^{xyz}$, then the value of $\frac{\partial^2 u}{\partial y \partial z}$ is:

(a) $e^{xyz}(xy)$ (b) $e^{xyz}(x + x^2 yz)$ (c) $e^{xyz}(yz)$ (d) $e^{xyz}(y + y^2 xz)$

15. If $z = \tan^{-1}\left(\frac{y}{x}\right)$, then $\left(\frac{\partial u}{\partial y}\right)$ equals to:

(a) $\frac{x^2}{x^2 - y^2}$ (b) $\frac{2x}{x^2 + y^2}$ (c) $\frac{x^2}{x^2 + y^2}$ (d) None of these

16. If $rt - s^2 > 0$ and $r > 0$, then at stationary point, $f(x, y)$ has:
(a) maximum value (b) minimum value (c) no extremum value (d) doubtful case

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2nd Continuous Internal Evaluation Odd Semester 2022-23

Course Name with Code: Mathematics I (AHT-003) — **Time Duration: 90mts**

Program/Branch/Year: B. Tech/CE/CSE/ECE/EEE/ME/1st — **Maximum Marks: 30**

Q No. 1 Attempt all. (1 X 6 =6)

a) Define Beta function $\beta(m,n)$. (CO2)(L1)

b) Calculate the value of Gamma $(-\frac{1}{2})$. (CO2)(L1)

c) $\frac{\partial(u,v)}{\partial(x,y)} \times \frac{\partial(x,y)}{\partial(u,v)}$ is equal to..... (CO3)(L1)

d) If δx is the error in x, then the percentage error in x is:..... (CO3)(L1)

e) A vector point function $\vec{F}$ is solenoidal if..... (CO4)(L1)

f) Calculate $gradf$, when $f = x^2 + yz$. (CO4)(L1)

Q No. 2 Attempt all. (4 X 3 =12)

a) Evaluate the integral with the help of Gamma function $\int_0^{\frac{\pi}{2}} \sqrt{\cot\theta}\, d\theta$. (CO2)(L3)

OR

b) Apply the relation between Gamma and Beat functions, prove that the expression $\Gamma\frac{1}{2} = \sqrt{\pi}$. (CO2)(L3)

c) Calculate the curved surface area of hemisphere of radius 'a' by revolution of axis method. (CO3)(L3)

OR

d) If $y_1 = \frac{x_2 x_3}{x_1}, y_2 = \frac{x_3 x_1}{x_2}, y_3 = \frac{x_1 x_2}{x_3}$, Show that the Jacobian of y_1, y_2, y_3 with respect to x_1, x_2, x_3 is 4. (CO3)(L3)

e) Calculate the directional derivatives of $f = xy^3 + yz^2$ at the point (2,-1,1) in the direction of vector $\hat{i}+2\hat{j}+3\hat{k}$. (CO4)(L3)

OR

f) Calculate the unit normal to the surface $x^3 + 3y^2 + 2z^2 = 6$ at the point $P(2,0,1)$. (CO4)(L3)

Q No. 3 Attempt all. (4 X 3 =12)

a) Change the order of integration $I = \int_0^1 \int_{x^2}^{2-x} xy\, dxdy$ and calculate the same. (CO2) (L3)

OR

b) Calculate $\iiint (x - 2y + z)\, dxdydz$, if the region of integration is bounded by the coordinate plane and plane is x+y+z=1. (CO2) (L3)

c) Using Jacobian, if $u = xy + yz + zx, v = x^2 + y^2 + z^2$ and $w = x + y + z$, determined whether there is a function relationship between u, v, w and if so, find it. (CO3) (L3)

OR

d) The power 'P' required to propel a steamer of length 'L' at a speed 'u' is given by $P = \lambda u^3 L^3$, where λ is constant. If 'u' is increased by 3% and 'L' is decreased by 1%, calculate the corresponding increase in P. (CO3) (L3)

e) If $\bar{V} = \frac{xi + yj + zk}{\sqrt{x^2 + y^2 + z^2}}$ Calculate the value of curl $\bar{V}$. (CO4) (L3)

OR

f) A fluid motion is given by $v = (y+z)\hat{i} + (z+x)\hat{j} + (y+x)\hat{k}$. The show that the motion is irrotational. (CO4) (L3)

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Solutions of IIND SESSIONAL

(1)

(a) $B(m,n) = \int_0^1 x^{m-1}(1-x)^{n-1}\,dx, \quad m,n>1$

(b) Gamma$(-1/2) = \Gamma(-1/2) \Rightarrow$ (We know $\Gamma(1/2) = \sqrt{\pi}$

Also $\Gamma n = n-1\,\Gamma(n-1) \Rightarrow -\frac{1}{2}\Gamma\left(\frac{-1}{2}\right) = \sqrt{\pi} \Rightarrow \Gamma n = -2\sqrt{\pi}$

put $n = 1/2 \Rightarrow \Gamma(-1/2) = -2\sqrt{\pi}$

(c) $\frac{\partial(u,v)}{\partial(x,y)} \times \frac{\partial(x,y)}{\partial(u,v)} = 1$ (d) Percentage error $= \frac{\delta x}{x} \times 100\%$

(e) for solenoidal $\Rightarrow$ Curl $\vec{F} = 0$ (Irrotational flow)
(div $\vec{F} = 0$)

(f) Given $f = x^2 + yz$, then grad $f = \nabla f = \left(\hat{i}\frac{\partial}{\partial x} + \hat{j}\frac{\partial}{\partial y} + \hat{k}\frac{\partial}{\partial z}\right)(x^2+yz)$

$= 2x\hat{i} + \hat{j}(z) + \hat{k}(y)$

(2) (a) Evaluate $\int_0^{\pi/2} \sqrt{\cot\theta}\,d\theta = \int_0^{\pi/2} \sqrt{\frac{\cos\theta}{\sin\theta}}\,d\theta = \int_0^{\pi/2} \cos^{1/2}\theta \sin^{-1/2}\theta\,d\theta$

(We know $\int_0^{\pi/2} \sin^p\theta \cos^q\theta\,d\theta = \frac{\Gamma\left(\frac{p+1}{2}\right)\Gamma\left(\frac{q+1}{2}\right)}{2\,\Gamma\left(\frac{p+q+2}{2}\right)} = \frac{\Gamma\left(\frac{1/2+1}{2}\right)\Gamma\left(\frac{-\frac{1}{2}+1}{2}\right)}{2\,\Gamma\left(\frac{1/2+(-1/2)+2}{2}\right)}$

(b) (We know $\beta(m,n) = \frac{\Gamma m\,\Gamma n}{\Gamma(m+n)}$

Also put $m = 1/2, n = 1/2$

$B(1/2, 1/2) = \frac{\Gamma(1/2)\Gamma(1/2)}{\Gamma\left(\frac{1}{2}+\frac{1}{2}\right)} = (\sqrt{\pi})^2 = \frac{\Gamma\left(\frac{3}{4}\right)\Gamma\left(\frac{1}{4}\right)}{2\,\Gamma 1} = \frac{1}{2}\Gamma\left(\frac{1}{4}\right)\Gamma\left(\frac{3}{4}\right)$

$\Rightarrow \int_0^1 x^{1/2-1}(1-x)^{1/2-1}\,dx = (\sqrt{\pi})^2 \Rightarrow \int_0^1 x^{-1/2}(1-x)^{-1/2}\,dx = (\sqrt{\pi})^2$

Put $x = \sin^2\theta$
$dx = 2\sin\theta\cos\theta\,d\theta \Rightarrow \int_0^{\pi/2} (\sin^2\theta)^{-1/2}(\cos^2\theta)^{-1/2} \times 2\sin\theta\cos\theta\,d\theta = (\sqrt{\pi})^2$

$= 2\int_0^{\pi/2} d\theta = (\sqrt{\pi})^2 \Rightarrow \Gamma(1/2) = \sqrt{\pi}$.

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Assessment Process

Academic Year 2022-23 (ODD Semester)

Department of Journalism and Mass communication

Faculty: Dr. Ankit Ghildiyal **Course: BJMC/ (BJMC304)**

Subject: New Media

S.N.	Student ID	Student Name	Sessional Marks (30)	Teacher Assessment	Weightage (SM)	Weightage (TA)	Total
			30	10	50	50	100
1	2021019008	Ayushi Pundir	24	9	40	45	85
2	2021019005	Apurva Mishra	0	3	0	15	15
3	2021019009	Mujtaba Shah Khan	16	6	27	30	57

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Department of Journalism and Mass communication

List of Slow Learners
Academic Year 2022-23 (ODD Semester)

Department of Journalism and Mass communication

Faculty: Dr. Ankit Ghildiyal **Course: BJMC/ (BJMC304)**

Subject: New Media

S.N	Student ID	Student Name
1	2021019005	Apurva Mishra
2	2021019009	Mujtaba Shah Khan

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Department of Journalism and Mass communication

Remedial Class Attendance

Faculty: Dr. Ankit Ghildiyal **Course: BJMC/ (BJMC304)**

Subject: New Media

S.N	Student ID	Student Name	7/11	15/11	6/12	12/12	20/12
1	2021019005	Apurva Mishra	P	P	P	P	P
2	2021019009	Mujtaba Shah Khan	P	P	P	A	P

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List of Advance Learners
Academic Year 2022-23 (ODD Semester)

Faculty: Dr. Ankit Ghildiyal **Course: BJMC/ (BJMC304)**

Subject: New Media

S.N	Student ID	Student Name
1	2021019008	Ayushi Pundir

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New media
Important Questions for Slow Learners

UNIT-1

Define new media.

What are the main characteristics of new media?

How do new media entertain its users?

What are the advantages of new media?

Is new media is beneficial for you? If yes then give reasons.

What are the types of new media?

Define the latest trends in new media?

Define the growth and development of new media?

Write a note on characteristic of new media?

What are the roles of new media in Indian context?

What do you mean by the concept of media and society?

Define the different uses of new media?

Write a note on new media and democracy?

What does a lack of credibility mean?

Define fake news?

What is privacy and data protection?

What does privacy mean?

What is cyber bullying? Explain with suitable examples?

Write a note on commercialization of the internet?

Write a note on social media addiction?

What are the three factor of credibility?

What does credibility perceive?

UNIT-2

How you define the role of media in democracy?

What do you mean by citizen participation?

What are the impacts of new media on society?

What are the main functions of new media?

Define the new media as a medium of communication?

What are the examples of new media?

What is new media communication?

What are the characteristics of new media?

Write a note on new media as a medium of journalism?

Which language and style you use for writing for new media?

Which rules you follow or not for writing new media?

Write a note on web archives?

What are the sources of new media?

UNIT-3

Discuss the role of new media in the transmission of culture.

Online news is more interesting than printed news discuss.

What is the purpose of blog?

Define the impact of new media on society?

How new media technologies impact social and societal issues?

What are the impacts of social media on society?

Define the social impact of new media?

What is social media and its uses?

Define social media in your own words?

Write a short note on social media?

What do you mean by mobile communication?

What is mobile communication technology?

Define social media?

Is social media and internet are same?

What is the similarity between social media and social networking?

What are the differences between social media and social networking?

UNIT-4

What are the features of social media?

Write a note on concept of social media?

Define the types of social media?

Write a short note on how has social media benefited you?

What do you mean by social networking?

What are the advantages and disadvantages of social media?

What are the benefits of using social media?

How is social networking useful to students?

Why is social media so important?

What are the dangers associated with social networking?

What is the role of media in society?

What are the bad effects of social media?

Is Facebook social media and social networking?

What is being credible?

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Class Test for Slow Learners

Subject Name with code: New Media/BJMC304
Time Duration: 40 Minutes
Program/Semester/Year: BJMC/3rd Semester/2nd Year

Questions:

1. Define new media. Explain its characteristics.
2. Write a detailed note on growth of WWW
3. Explain the term media convergence.
4. Define website and its types.
5. What are the factors that should be taken into consideration while creating and launching a Website?
6. Write a note on newsgroups. What are these used for?

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Class Test for Slow Learners

Subject Name with code: New Media/BJMC304
Time Duration: 40 Minutes
Program/Semester/Year: BJMC/3rd Semester/2nd Year

S.N	Student ID	Student Name	Marks T (30)
1	2021019005	Apurva Mishra	20
2	2021019009	Mujtaba Shah Khan	22

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New media
MCQs for Advance Learners

New media refers to content created and distributed over?
Desk
Traditional media
Offline
Internet

New media follows the similar to traditional journalism?
Professional code of conduct
Free journalism
Vibes
Variations

SEO Stands for?
Search engine optimum
Search engine optimization
Search electronic optimization
None of the above

When IT Act 2000 came into effect?
17 October, 2000
11 November, 2000
17 October, 2001
11 November, 2001

What does ISP stand for?
Internet Safety
Internet Service Provider
Provider Internet
Internet Service

Web archives are?
Digital Library
Websites
Blogs
Templates

Who invented WWW?
Denis Mcquail
George Tag
Tim Berners Lee
Phoebe Joseph

Which of the following technologies was developed first?
Electronic Mail
ARPANET
HTTP
World Wide Web

Google Chrome is a? ISP Web Browser Web Page Web Link
Which is not a search engine? Yahoo Windows Google Bing
What is a Web site's front page /main page is called? Home page Browser page Search page None of these
To protect a computer from virus, you should install —— on your computer? Backup wizard Disk cleanup Antivirus Disk defragmenter
What is the name of the IT law that India is having in the Indian legislature? India's Technology (IT) Act, 2000 India's Digital Information Technology (DIT) Act, 2000 India's Information Technology (IT) Act, 2000 The Technology Act, 2008
Which of the following is not an example of a computer as a weapon cyber-crime? Credit card fraudulent Spying someone using keylogger IPR Violation Pornography
Which of the following is not a type of peer-to-peer cyber-crime? Phishing Injecting Trojans to a target victim MiTM Credit card details leak in the deep web
McAfee is an example of? Photo Editing Software Quick Heal Virus Antivirus
Which one option is not a type of cybercrime? Data theft Forgery Damage to data and systems Installing antivirus for protection

Which is used to transmit information on the World Wide Web? HTTP HPPT HTPP HTTTP
A Computer can be linked to internet through the? Cable modem Phone-line modem DSL All of these
The Internet service that issues a multimedia interface to current resources is called? World Wide Web Gopher File Transfer Protocol Telnet
Which medium is not suitable for E-mail? Intranet Internet Extranet Paper
The internet also called? NET NOT NAT NFT
Which term is not used by intranet? IP HTTP TCP BSNL
A web address is also known as? LRU LUR URL ULR
Select the standard protocol of the Internet? TCP/IP Flash HTML Java
The computer connected to the internet must have? Have a unique IP address Be an IBM PC Have a modern connection Be internet compatible

An attempt to harm, damage or cause threat to a system or network is broadly termed as ____?
Cyber-crime
Cyber Attack
System hijacking
Digital crime

Compromising confidential information comes under _____?
Bug
Threat
Vulnerability
Attack

Who founded Facebook?
Mark Zuckerberg
Matt Mullenweg
Bill Gates
Steve Chen

Data _____ is used to ensure confidentiality?
Encryption
Locking
Decryption
Backup

Which of the following is the most viral section of the internet?
Chat Messenger
Social networking sites
Tutorial sites
Chat-rooms

Which of the following is the most popular social networking site on the internet?
MySpace
Facebook
Orkut
Friendster

Many social media sites and services provide _____ for legitimate account verification?
Retina scanning
Fingerprint scanning
CAPTCHA
2-step verification

Increase your security for social media account by always _____ as you step away from the system?
Signing in
Logging out
Signing up
Logging in

Micro Blogging is an example of which?
Twitter
Google+
Facebook
None of these

People who write content for a blog?
Blog
Blogosphere
Blogger
Blogging

What does VR mean?
Virtual Response
Vocal Ratio
Virtual Reality
Vital Response

To provide any website available on the Internet is called?
Searching
Surfing
Web Hosting
None of these

Telegram is an example of?
Social Site
Instant Messaging
Web Brower
None of these

IRCTC is a_____?
Plastic Money
E-mail Service Provider
Railway Service Provider
E-Wallet

Internet explorer is a type of?
Operating systems
Compiler
Browsers
IP Address

Which of the following describes e-commerce?
Doing business electronically
Doing business
Online advertising
All of the above

Copyright is a form of _____ property?
Business
Intellectual
Private
Personal

Which of the following operating system is used on mobile phones?
Windows Vista
Windows XP
Android
All of the above

Digital marketing is often referred to as_____? Online marketing Internet marketing Web marketing All of the above
The process of connecting to the internet account is? Sing in Sing out Login Logout
Internet is? A worldwide interconnected network of computers which use a common protocol to communicate with one another A worldwide network of computers An interconnected network of computers A local computer network
ARPANET stands for? Advanced Rehearse Projects Agency Network Advanced Research Projects Agency Newark Advanced Research Projects Agency Network None of these
What is byline? Reporters name printed with story A railway track Text written on lines None of these
What is the full form of PPC? Per pay click Pay per click Prize per click Both a and b

HOD
Department of Journalism
and Mass Communication
Tula's Institute, Dehradun

Faculty Signature

HOD Signature

GATE 2023

Graduate Aptitude Test in Engineering

अभियांत्रिकी स्नातक अभिक्षमता परीक्षा

Scorecard

Name of Candidate	**ACHYUT PRAMOD SHAH**
Parent's/Guardian's Name	**PRAMOD SHAH**
Registration Number	**CS23S18008051**
Date of Birth	**22-Jun-2002**
Examination Paper	**Computer Science and Information Technology (CS)**

GATE Score:	**386**	Marks out of 100:		**35.67**	
All India Rank in this paper:	**7855**	Qualifying Marks*	General	EWS/OBC (NCL)	SC/ST/PwD
Number of Candidates Appeared in this paper:	**75680**		**32.5**	**29.2**	**21.6**

Valid up to 31st March 2026

Prof. Preetamkumar M. Mohite

Organizing Chairman, GATE 2023
on behalf of NCB-GATE, for MoE

83feafe80a899731ad5c62950fd2d623

** A candidate is considered qualified if the marks secured are greater than or equal to the qualifying marks mentioned for the category for which valid category certificate, if applicable, is produced along with this score card.*

General Information

The GATE 2023 score is calculated using the formula

$$\text{GATE Score} = S_q + (S_t - S_q)\frac{(M - M_q)}{(M_t - M_q)}$$

where,
M is the marks obtained by the candidate in the paper, mentioned on this GATE 2023 scorecard
M_q is the qualifying marks for general category candidate in the paper
M_t is the mean of marks of top 0.1% or top 10 (whichever is larger) of the candidates who appeared in the paper (in case of multi-session papers including all sessions)
S_q = 350, is the score assigned to M_q
S_t = 900, is the score assigned to M_t

In the GATE 2023 score formula, M_q is 25 marks (out of 100) or $\mu + \sigma$, whichever is greater. Here μ is the mean and σ is the standard deviation of marks of all the candidates who appeared in the paper.

Qualifying in GATE 2023 does not guarantee either an admission to a post-graduate program or a scholarship/assistantship. Admitting institutes may conduct further tests and interviews for final selection.

Graduate Aptitude Test in Engineering (GATE) 2023 was organized by Indian Institute of Technology Kanpur on behalf of the National Coordination Board (NCB) – GATE for the Department of Higher Education, Ministry of Education (MoE), Government of India.

Director
Tula's Institute, Dehradun

Director
Tula's Institute, Dehradun

GATE 2022 Scorecard

Graduate Aptitude Test in Engineering (GATE)

अभियांत्रिकी स्नातक अभिक्षमता परीक्षा

Name of Candidate	ANURAG AGARWAL
Parent's/Guardian's Name	AJAY KUMAR AGARWAL
Registration Number	CS22S18007102
Date of Birth	13-Aug-1999
Examination Paper	Computer Science and Information Technology (CS)

Anurag.

GATE Score:	416	Marks out of 100:		30	
All India Rank in this paper:	5934	Qualifying Marks*	General	EWS/OBC (NCL)	SC/ST/PwD
Number of Candidates Appeared in this paper:	77257		25.0	22.5	16.6

Valid up to 31st March 2025

Prof. Ranjan Bhattacharyya

Organising Chairman, GATE 2022
on behalf of NCB-GATE, for MoE

b4a14a9d8399796e6db99f2eaf5ffa28

** A candidate is considered qualified if the marks secured are greater than or equal to the qualifying marks mentioned for the category for which valid category certificate, if applicable, is produced along with this score card.*

Organising Institute: Indian Institute of Technology Kharagpur

General Information

The GATE 2022 score is calculated using the formula

$$\text{GATE Score} = S_q + (S_t - S_q)\frac{(M - M_q)}{(M_t - M_q)}$$

where,
M is the marks obtained by the candidate in the paper, mentioned on this GATE 2022 scorecard
M_q is the qualifying marks for general category candidate in the paper
M_t is the mean of marks of top 0.1% or top 10 (whichever is larger) of the candidates who appeared in the paper (in case of multi-session papers including all sessions)
S_q = 350, is the score assigned to M_q
S_t = 900, is the score assigned to M_t

In the GATE 2022 score formula, M_q is 25 marks (out of 100) or $\mu + \sigma$, whichever is greater. Here μ is the mean and σ is the standard deviation of marks of all the candidates who appeared in the paper.

Qualifying in GATE 2022 does not guarantee either an admission to a post-graduate program or a scholarship/assistantship. Admitting institutes may conduct further tests and interviews for final selection.

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Director
Tula's Institute, Dehradun

Director
Tula's Institute, Dehradun

COMMON ADMISSION TEST 2023 (CAT 2023)
INDIAN INSTITUTES OF MANAGEMENT

CAT 2023 SCORE CARD

Name of the Candidate : AYAN CHAKRABORTY

Candidate's Contact Details :
C3, Asha Kunja Flats,Tarulia 2nd Lane, Keshtopur,Kolkata

Test Day Photo

Uploaded Photo

Town/City : Kolkata
District : Kolkata
State : West Bengal
Email : ayanchakraborty1006@gmail.com

Ayan

CAT Application Number	23298698	PwD Status	No
Gender	Male	Category	General
Date of Birth	06/Oct/2001	Date of Test	26th Nov 2023

Section		Section		Section		Total	
Verbal Ability & Reading Comprehension		Data Interpretation & Logical Reasoning		Quantitative Ability			
Scaled Score	Percentile	Scaled Score	Percentile	Scaled Score	Percentile	Overall Scaled Score	Overall Percentile
21.67	88.13	13.01	84.63	10.77	85.32	45.45	90.59

Instructions:

1. Only those candidates who have taken the Common Admission Test (CAT 2023) are entitled to receive the score card. Keep a print-out of this score card for your information pertaining to CAT 2023. You will not receive the score card by email or by post.
2. The Overall Scaled Score is the sum of the scaled scores of the candidate in the three sections.
3. Percentile refers to the percentage of candidates who receive a scaled score less than or equal to the scaled score obtained by the candidate.
4. IIMs and Non-IIM member institutions independently decide how to use CAT 2023 score s in line with their own selection process. The scores are to be used only for selecting the candidates to their respective Post Graduate/Doctoral (Fellow) Programme(s) in Management.
5. Detection of instances of incorrect information and process violation by a candidate at any stage will lead to disqualification of the candidate. CAT scores of such candidates who are disqualified will become null and void. Such disqualified candidates will not be allowed to appear for CAT in future. If such instances go undetected during the current selection process but are detected in subsequent years, such disqualification and the associated penalties will take place with retrospective effect.
6. All queries regarding post-CAT 2023 selection process must be directed to the respective IIMs. CAT Centre will not answer post-CAT queries.
7. CAT 2023 score is valid only until 31st December 2024 and is subject to the candidate meeting the minimum eligibility marks in the qualifying examination. The score card will be available on www.iimcat.ac.in till 31st December 2024 to download.
8. Webmail support cat2023@iiml.ac.in & cathelpdesk@iimcat.co.in will be available till 31st March 2024.

Director
Tula's Institute, Dehradun

Director
Tula's Institute, Dehradun

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Sample of NPTEL

NPTEL Online Certification

(Funded by the MoE, Govt. of India)

TOP TOPPER 5%

This certificate is awarded to

SNEHA SHARMA

for successfully completing the course

Programming In Java

with a consolidated score of **82** %

Online Assignments	24.72/25	Proctored Exam	57.75/75

Total number of candidates certified in this course: **9357**

Director
Tula's Institute, Dehradun

Jan-Apr 2023

(12 week course)

Prof. Debjani Chakraborty
Coordinator, NPTEL
IIT Kharagpur

Indian Institute of Technology Kharagpur

FREE ONLINE EDUCATION swayam

NPTEL Online Certification

(Funded by the MoE, Govt. of India)

This certificate is awarded to

VIRAT KUMAR SINGH

for successfully completing the course

Data Structure and Algorithms using Java

with a consolidated score of **71** %

Online Assignments	24.6/25	Proctored Exam	46.5/75

Total number of candidates certified in this course: **1806**

Tulas Institute, Dehradun
Director

Jul-Oct 2022

(12 week course)

Prof. Debjani Chakraborty
Coordinator, NPTEL
IIT Kharagpur

Indian Institute of Technology Kharagpur

FREE ONLINE EDUCATION swayam

ID No: NPTEL22CS92S63310260 To validate the certificate No. of credits recommended: 3.0

NPTEL Online Certification

(Funded by the MoE, Govt. of India)

This certificate is awarded to

VIRAT KUMAR SINGH

for successfully completing the course

Programming in Java

with a consolidated score of **80** %

Online Assignments	25/25	Programming Assignment	25/25	Proctored Exam	29.5/50

Total number of candidates certified in this course: **6899**

Tula's Institute, Dehradun
Director

Jul-Oct 2022

(12 week course)

Prof. Debjani Chakraborty
Coordinator, NPTEL
IIT Kharagpur

Indian Institute of Technology Kharagpur

FREE ONLINE EDUCATION swayam

No: NPTEL22CS102S53310131

To validate the certificate

SAMPLE OF BRIDGE COURSE

[MCA- Model Curriculum Structure]

Proposed Scheme of Examination of M.C.A. 2-Year Programme
MCA Bridge Course (Qualifying Papers)
(Bridge Course must be completed before commencement of MCA Ist Semester)

S.No.	Sub. Code	Subject Name	Maximum Marks Allotted					Total Marks	Contact Hours Per			Total Credits
			Theory			Practical						
			End Sem.	Mid Sem.	Quiz /Assignment	End Sem.	Lab Work &Sessional		L	T	P	
1	CAT-001	Introduction of Information Technology	30	20				50	2	1	0	--
2	CAT-002	Programming Fundamentals With 'C'	30	20				50	2	1	2	--
3	CAT-003	Fundamental of Web Technology	30	20				50	2	1	2	--

Director
Tula's Institute, Dehradun

Veer Madho Singh Bhandari Uttarakhand Technical University, Dehradun

Tabulation Register

MCA 1 Semester 1 Year ODD Semester Examination 2022-23 (Regular)

Institute Name & Code :- TULAS INSTITUTE DEHRADUN (012)

| Sl. No. | Roll No. / Enrollment No. | Name Of Student / Father's Name / Mother's Name | Subject Name (Code), Credits | | |

Veer Madho Singh Bhandari Uttarakhand Technical University, Dehradun

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