INDEX

Criterion no: 6.5.1

Criterion Details: Internal Quality Assurance Cell (IQAC) has contributed significantly for institutionalizing the quality assurance strategies and processes.

S. No.	Particulars	Annexure No.
1.	Workshop On Effective Curriculum Delivery	Annexure - I
2.	Minute of Meetings (MOM) • Academic Committee • Research Committee • Sample of Feedback	Annexure - II
3.	Sample Question paper of CIE – I & CIE – II	Annexure - III
4.	Sample Course File	Annexure - IV
5.	Sample of Vibgyor Club Activity	Annexure - V
6.	Sample of IEEE Student Chapter Activity	Annexure -VI
7.	Sample of NPTEL	Annexure - VII

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Tula's Institute, Dehradun

Workshop On Effective Curriculum Delivery

Title of Event: "Effective Curriculum Delivery"

Date: 08/8/2022-10/08/2022

No. of Participants: 50

Summary of the Event:

Tula's research cell organized the 3-days workshop on "effective curriculum delivery" for faculty members of all departments, this workshop was focused on the different aspect of curriculum design and implementation, like development of a curriculum and effective delivery of the curriculum through different teaching and learning methodology.
The eminent speaker of first session day one was Dr. Vekatesh Raikar, Director at KLE technological University focuses his talk on curriculum development with different model for colleges and university from NAAC/NBA perspective. The speaker for Second session day one was Dr. Narshima Ayachit, Registrar at KLE technological University, Dr. Ayachit focuses his talk on quality in higher education teaching-learning.

The eminent speaker of first session day two was Dr. Kshitij Singhal, Dean MIT, Moradabad, discussed on the faculty student interaction and art. The speaker for Second session day was Dr. Arvind Bal Gupta, Head Curriculum Development centre NITTTR Chandigarh deliver his talk on principle of curriculum design and delivery.

On the third day the eminent speaker was Dr. S. C Handa, Prof. (Retd.) IITR, deliver his talk on How to be an excellent teacher, Dr. Handa provide the important insight on the quality teaching and his topic of talk is his legendary presentation "Taj Mahal". The speaker of session two last day was Dr. Pankaj Bijalwan, Dr. bijalwan deliver the talk on efficient time management and stress management. Dr. Sandip vijay, Director, Dr. Nishant Saxena Dean Academic, Dr. Sunil Semwal Dean R&D and Dr. Ranit kishor, Dean Agriculture and Management of Tula's Institute, Dehradun was presented in
the event.
Program Schedule

S.N	Topic	Speaker	Time	Date
1	Curriculum Design	Dr. Vekatesh Raikar	11:00-1:00	08/08/2022
2	A Quality in Higher Education Teaching-Learning	Dr. Narshima Ayachit	2:00-4:00	
3	How to be an effective teacher	Dr. Kshitij Singhal	11:00-1:00	09/08/2022
4	Curriculum design and development	Dr. A. B Gupta	2:00-4:00	
5	How to be an excellent teacher	Dr. S.C. Handa	11:00-1:00	10/08/22
6	Time and Stress Management	Dr. Pankaj Bijalwan	2:00-4:00	
7	Valedictory and vote of thanks	Dr Sandip Vijay/Dr. Nishant Saxena	4:00-4:15	

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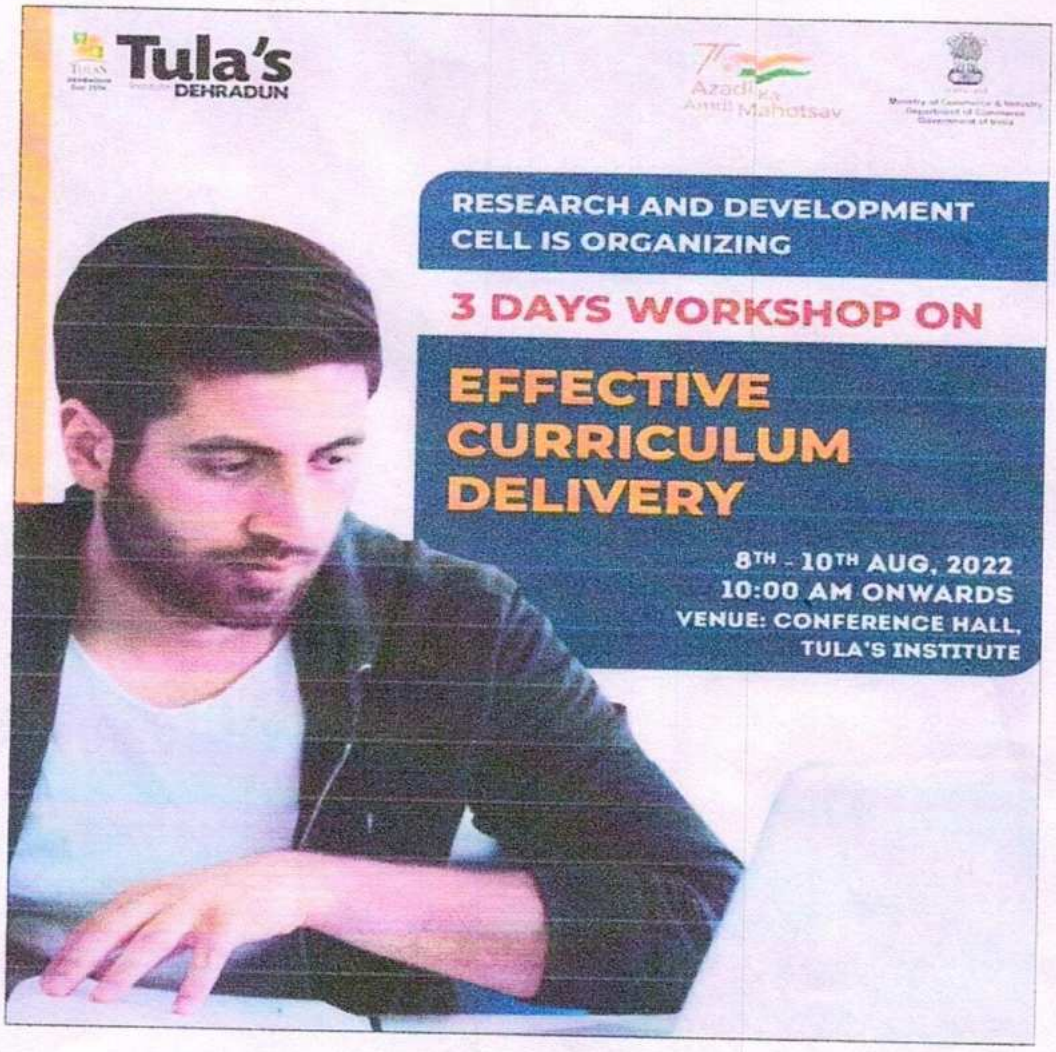
Director
Tula's Institute, Dehradun



Event Creative

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Tula's Institute, Dehradun

Minute of Meetings (MOM)

Date: 25-04-2023

NOTICE

This is to inform you that the 41st meeting of academic committee will be held at IQAC Room at 03:00pm on 27/04/2023. All the HOD's and other bearers are requested to attend the meeting.

The agenda points for the following meeting are as follow:

AC.41.01: Confirmation of the minutes of 40th meeting of academic committee.
AC.41.02: Preparation of syllabus coverage report (including practical's) of all the programs.
AC.41.03: Uploading pending attendance in UMS and identify the students having aggregate attendance less than 75%.
AC.41.04: Discussion on the format for the budget requirement from the individual departments for the next session.
AC. 41.06: Review on the preparation of annual cultural fest "Sanskriti".
AC. 41.07: Felicitation of meritorious students and faculty members in "Sanskriti".
AC. 41.08: Any other matters from departments with the permission of chair

Dr. Nishant Saxena
(Academic committee Coordinator)

Copy to:

Registrar office	: For kind information please
Dean office	: For kind information please
Examination Control Room	: For kind information please
All HOD's	: For kind information please

Director
Tula's Institute, Dehradun

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41st Meeting of Academic Committee
(Minutes of Meetings)

Date/Time	**27/04/2023/ 3:00PM**	
Venue:	**IQAC Room**	
Minutes taken by:	**Ms. Samiksha**	
Chairperson	**Dr. Anil Kumar Dhaiya**	
Attendee:	**Dept. & Designation**	**Signature**
Dr. Anil Kumar Dhaiya	Director	Anil Kumar
Dr. Nishant Saxena	Dean Academics	
Dr. Pavan Kumar Chaubey	Registrar	Pavan
Dr. Ranit Kishor.	Dean Management & B.Sc. Agriculture.	
Dr. R.B. Singh	HOD, CSE	
Mr. Mukesh Pathela	HOD, Applied Science	
Mr. Ankur Gurjar	HOD, CE	Ankur
Mr. Abhishek Chakravorty	HOD, ECE/EEE	
Mr. Ankit Jain	HOD, ME	
Dr. Anita Chauhan	HOD, Agriculture	
Dr. K. R. Ansari	HOD, Management	
Dr. R.C. Pathak	HOD, BJMC	
Absent:	**Reason**	

Agenda:

Academic Activities of the Current Semester

Issues	**Actions**		
	No.	**Actionee**	**Due Date**
AC.41.01: Confirmation of the minutes of 40th meeting of academic committee.	1	Dean Academics	27/04/23.
AC.41.02: Preparation of syllabus coverage report (including practical's) of all the programs	2	All HOD's	30/4/23
AC.41.03: Uploading pending attendance in UMS and identify the students having aggregate attendance less than 75%.	3	All HOD's	05/5/23
AC.41.04: Discussion on the format for the budget requirement from the individual departments for the next session.	4	All HOD's	July 23
AC.41.05: Discussion on the review of the construction and academic allotment of the newly build classrooms in E, F, G Blocks and allotment of these spaces for the next session.	5	All HOD's	July 23

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AC.41.06: Review on the preparation of annual cultural fest "Sanskriti".	6	All HOD's	—
AC.41.07: Felicitation of meritorious students and faculty members in "Sanskriti".	7	All HOD's	05/05/23
AC.41.08: Any other matters from departments with the permission of chair	8		—

Discussions/ Resolutions:

1. The minutes of the 40th meeting of the Academic Committee was presented for confirmation. After thorough review, the minutes were approved by unanimous consent.
2. The committee discussed the preparation of latest syllabus coverage report including practicals of each department. Lagging courses will give extra lectures to complete their syllabus.
3. The committee discussed the uploading of remaining attendance in UMS & CAMU portal. Identification of attendance defaulter students and arrange extra lecture to make up for their attendance.
4. The committee circulated a new format for the budget requirement from the individual departments for the next session.
5. The committee discussed allotment of classrooms in the newly built classrooms in E, F, G block. Classrooms requirement of each department will ask to submit in IQAC
6. The committee discussed the overall preparation of the annual cultural fest "Sanskriti" and asked HOD's to ensure maximum participation in the event.
7. It is decided that students will be awarded in two categories on the basis of last session percentage and high-class attendance holders. Faculties will be awarded in category of Employability, Innovation teaching methods and research and development. HOD's were asked to prepare the list for the same.
8. Any other matter: -No other point raised by any member.

The meeting concluded with a vote of thanks to all attendees for their valuable contributions and active participation.

(Academic committee Coordinator)

Copy to:

All actionee: for necessary action

Director
Tula's Institute, Dehradun

ACTION TAKEN REPORT

The action taken report of 41st meeting of Academic Committee (agenda item wise) held on 28/04/2023 is as follows:

1. Reference Agenda Points AC.41.01: Confirmation of Minutes of the 40th Academic Committee Meeting
   The minutes of the 40th meeting of the Academic Committee have been confirmed.

2. Reference Agenda Points AC.41.02: Preparation of Syllabus Coverage Report
   Preparation of syllabus coverage report, including practicals, for all programs has been initiated.
   Departments have been instructed to compile and submit the report timely in IQAC.

3. Reference Agenda Points AC.41.03: Uploading Pending Attendance in UMS
   Pending attendance has been uploaded in the University Management System (UMS). Students with aggregate attendance less than 75% have been identified for further action.

4. Reference Agenda Points AC.41.04: Discussion on Format for Budget Requirement
   Discussions were held on the format for budget requirements from individual departments for the next session.
   A standardized format has been proposed and finalized for better budget planning and allocation.

5. Reference Agenda Points AC.41.05: Review of Construction and Academic Allotment of Newly Built Classrooms
   Review of the construction and academic allotment of newly built classrooms in E, F, G Blocks has been conducted. Allotment of these spaces for the next session has been discussed and finalized based on academic requirements.

6. Reference Agenda Points AC.41.06: Review of Preparation of Annual Cultural Fest "Sanskriti"
   The preparation of the annual cultural fest "Sanskriti" has been reviewed. Plans and activities for the fest are being coordinated and finalized for a successful event.

7. Reference Agenda Points AC.41.07: Felicitation of Meritorious Students and Faculty Members in "Sanskriti"
   Plans for the felicitation of meritorious students and faculty members during "Sanskriti" have been discussed. Criteria for selection and recognition have been established, and preparations are underway for the ceremony.

(Academic committee Coordinator)

Director
Tula's Institute, Dehradun

Date: 02-01-2023

NOTICE

This is to inform you that the 40th meeting of academic committee will be held at IQAC Room at 11:00am on 04/01/2023. All the HOD's and other bearers are requested to attend the meeting.

The agenda points for the following meeting are as follow:

AC.40.01: Confirmation of the minutes of 39th meeting of academic committee.

AC.40.02: Display and circulation of academic calendar and time table of upcoming even semester of the session 2022-23.

AC.40.03: To discuss Feedback Collection of Teaching and Learning (previous semester) and format of exit form for the session 2022-23.

AC.40.04: Renewal of Hard journals, DELNET Database software updated from Libsys to KOHA Cloud base for the year 2023-2024.

AC.40.05: Reconstitution of ICC committee and Proctorial board committee. Conduction of Awareness session for girl students of the current session (ODD SEM 2022-23) and action taken.

AC.40.06: Conduction of workshops and industrial visits.

AC.40.07: Project progress report for final year students.

AC.40.08: Discussion on preparation and proposal of the dates of Cultural Fest "Sanskriti".

AC.40.09: Revision of Lab Manuals with additional activities.

AC.40.10: To review the AQAR Qualitative and Quantitative points.

AC.40.11: Any other matters from departments with the permission of chair

Dr. Nishant Saxena
(Academic committee Coordinator)

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Dean office	: For kind information please
Examination Control Room	: For kind information please
All HOD's	: For kind information please

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40th Meeting of Academic Committee
(Minutes of Meetings)

Date/Time	**04/01/2023/ 11:00AM**	
Venue:	**IQAC Room**	
Minutes taken by:	**Ms. Samiksha**	
Chairperson	**Dr. Nishant Saxena**	
Attendee:	**Dept. & Designation**	**Signature**
Dr. Nishant Saxena	Dean Academics	
Dr. Pavan Kumar Chaubey	Registrar	Pavan
Dr. Ranit Kishor	Dean Management & B.Sc. Agriculture	
Dr. R.B. Singh	HOD, CSE	
Mr. Mukesh Pathela	HOD, Applied Science	
Mr. Ankur Gurjar	HOD, CE	
Mr. Abhishek Chakravorty	HOD, ECE/EEE	
Mr. Ankit Jain	HOD, ME	
Dr. Anita Chauhan	HOD, B.Sc. Agriculture	
Dr. K. R. Ansari	HOD, GSB	
Dr. R.C. Pathak	HOD, BJMC	R.C. Pathak
Absent:	**Reason**	

Agenda:

Academic Activities of the Current Semester

Issues	**Actions**		
	No.	**Actionee**	**Due Date**
AC.40.01: Confirmation of the minutes of 39th meeting of academic committee.	1	Dean Academics	04/1/23
AC.40.02: Display and circulation of academic calendar and time table of upcoming even semester of the session 2022-23.	2	Dean's/HOD's	10/1/23
AC.40.03: To discuss Feedback Collection of Teaching and Learning (previous semester) and format of exit form for the session 2022-23.	3	Dean's/HOD's	15/1/23

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AC.40.04: Renewal of Hard journals, DELNET Database software updated from Libsys to KOHA Cloud base for the year 2023-2024.	4	Librarian	March 2023
AC.40.05: Reconstitution of ICC committee and Proctorial board committee. Conduction of Awareness session for girl students of the current session (ODD SEM 2022-23) and action taken.	5	ICC and Proctorial head	10/3/23
AC.40.06: Conduction of workshops and industrial visits.	6	All HOD's	—
AC.40.07: Project progress report for final year students.	7	All HOD's	15/2/23
AC.40.08: Discussion on preparation and proposal of the dates of Cultural Fest "Sanskriti".	8	All Members	—
AC.40.09: Revision of Lab Manuals with additional activities.	9	All Members	—
AC.40.10: To review the AQAR Qualitative and Quantitative points.	10	All HOD's	29/2/23
AC.40.11: Any other matters from departments with the permission of chair	11		

Discussions/ Resolutions:

1. The minutes of the 39th meeting of the Academic Committee was presented for confirmation. After thorough review, the minutes were approved by unanimous consent.
2. The committee discussed the display and circulation of the academic calendar & Time table for the upcoming even semester of the session 2022-23 through notice boards and ERP portals. The proposed calendar was presented, taking into consideration holidays, examination schedules, and other relevant events. It was decided to finalize the calendar and distribute it among the departments.
3. The committee discussed the feedback from students regarding the teaching-learning methods used in the semester. It was acknowledged that gathering students perspectives can provide valuable insights for improving the overall educational experience.
4. The committee discussed the renewal of the library software's and hardcopy journals like DELNET Database software updated from Libsys to KOHA Cloud base for the year 2023-2024.
5. The committee discussed to restructure the ICC and Proctorial board members for the next coming session and more emphasize on awareness programs on the girls.
6. The committee discussed the organization of workshops and field visits to enhance students practical knowledge. Departments were encouraged to propose relevant activities, ensuring alignment with the curriculum and educational objectives.
7. The project progress review of final year projects were being discussed in the committee and all the HOD's were instructed to complete the 40% of the project with one month post reporting date of the students.
8. The committee discussed the organization of the annual cultural fest, Sanskriti. Plans for the event, including themes, activities, and participation, were presented. Departments were encouraged to actively participate and contribute to the fest's success.
9. The need to include additional feature like Rubrics in lab manuals was discussed. The committee emphasized the importance of providing practical exposure to students through

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engaging activities. Departments were requested to revise and enhance lab manuals accordingly.

10. Discussion on AQAR Qualitative and Quantitative points and provided feedback for improvement. The criteria heads were assigned the responsibility of making the necessary revisions and collect data for the session 2022-23.
11. Any other matter: -No other point raised by any member and the meeting concluded with a vote of thanks to all attendees for their valuable contributions and active participation.

04/09/24

Dr. Nishant Saxena
(Academic committee Coordinator)

Copy to:

All actionee: for necessary action

Director
Tula's Institute, Dehradun

ACTION TAKEN REPORT

The action taken report of 40th meeting of Academic Committee (agenda item wise) held on 04/01/2023 is as follows:

1. Reference Agenda Points AC.40.01: Confirmation of Minutes of the 39th Academic Committee Meeting:
   The minutes of the 39th meeting of the Academic Committee have been confirmed.

2. Reference Agenda Points AC.40.02: Display and Circulation of Academic Calendar and Timetable:
   The academic calendar and timetable for the upcoming even semester of the session 2022-23 have been displayed and circulated as per the directive.

3. Reference Agenda Points AC.40.03: Feedback Collection of Teaching and Learning:
   Feedback from the previous semester's teaching and learning sessions has been collected.
   The format of the exit form for the session 2022-23 has been discussed and finalized.

4. Reference Agenda Points AC.40.04: Renewal of Hard Journals and Database Software Update Hard journals have been renewed for the year 2023-2024.
   The DELNET Database software has been updated from Libsys to KOHA Cloud base for enhanced functionality.

5. Reference Agenda Points AC.40.05: Reconstitution of ICC Committee and Proctorial Board Committee
   The ICC committee and Proctorial board committee have been reconstituted. Awareness sessions for girl students of the current session (ODD SEM 2022-23) have been conducted as per requirement.

6. Reference Agenda Points AC.40.06: Conduction of Workshops and Industrial Visits
   Workshops and industrial visits have been conducted as scheduled across all departments.

7. Reference Agenda Points AC.40.07: Project Progress Report for Final Year Students
   Project progress reports for final year students have been submitted by respective departments.

8. Reference Agenda Points AC.40.08: Discussion on Preparation and Proposal of Dates for Cultural Fest "Sanskriti"
   Dates for the Cultural Fest "Sanskriti" have been proposed and discussed among all members.

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9. Reference Agenda Points AC.40.09: Revision of Lab Manuals with Additional Activities

   Lab manuals have been revised with additional activities for the benefit of students.

10. Reference Agenda Points AC.40.10: Review of AQAR Qualitative and Quantitative Points

    AQAR qualitative and quantitative points have been reviewed by all HODs.

Dr. Nishant Saxena
(Academic committee Coordinator)

Director
Tula's Institute, Dehradun

Date: 20-12-2022

NOTICE

This is to inform you that the 39th meeting of academic committee will be held at IQAC Room at 03:30pm on 22-12-2022. All the HOD's and other bearers are requested to attend the meeting.

The agenda points for the following meeting are as follow:

AC.39.01: Confirmation of the minutes of 38th meeting of academic committee.

AC.39.02: Preparation of academic and holiday calendar of upcoming even semester of the session 2022-23.

AC.39.03: Implementation of CAMU (new ERP system).

AC.39.04: Uploading attendance student attendance in UMS and CAMU portal.

AC.39.05: Discussion on conduction of slow and advanced learners' classes on the basis of result of 1st C.I.E.

AC.39.06: ICT usage such as Nearpod, Mentimeter, CAMU & PI360

AC.39.07: Conduction of the internal audit in each department.

AC.39.08: Any other matters from departments with the permission of chair

Dr. Nishant Saxena
(Academic committee Coordinator)

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39th Meeting of Academic Committee
(Minutes of Meetings)

Date/Time	**22/12/2022/3:30PM**	
Venue:	**IQAC Room**	
Minutes taken by:	**Ms. Samiksha**	
Chairperson	**Dr. Nishant Saxena**	
Attendee:	**Dept. & Designation**	**Signature**
Dr. Nishant Saxena	Dean Academics	
Dr. Pavan Kumar Chaubey	Registrar	
Dr. Ranit Kishor.	Dean Management & B.Sc. Agriculture	
Dr. R.B. Singh	HOD, CSE	
Mr. Mukesh Pathela	HOD, Applied Science	
Mr. Ankur Gurjar	HOD, CE	
Mr. Abhishek Chakravorty	HOD, ECE/EEE	
Mr. Ankit Jain	HOD, ME	
Dr. Anita Chauhan	HOD, Agriculture	
Dr. K. R. Ansari	HOD, Management	
Dr. R.C. Pathak	HOD, BJMC	R.C. Pathak
Absent:	**Reason**	

Agenda:

Academic Activities of the Current Semester

Issues	**Actions**		
	No.	**Actionee**	**Due Date**
AC.39.01: Confirmation of the minutes of 38th meeting of academic committee.	1	Dean Academics	22/12/22
AC.39.02: Preparation of academic and holiday calendar of upcoming even semester of the session 2022-23.	2	Dean's/HOD's	30/12/22
AC 39.03: Implementation of CAMU (new ERP system).	3	Dean's/HOD's	05/1/23
AC.39.04: Uploading attendance student attendance in UMS and CAMU portal.	4	All HOD's	Jan 23
AC.39.05: Discussion on conduction of slow and advanced learners classes on the basis of result of 1st C.I.E.	5	All members	30/12/23
AC.39.06: ICT usage such as Nearpod, Mentimeter, CAMU & PI360.	6	All HOD's	15/12/23

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AC.39.07: Conduction of the internal audit in each department.	7	All HOD's	15/1/23
AC.39.08: Any other matters from departments with the permission of chair.	8		

Discussions/ Resolutions:

1. The minutes of the 38th meeting of the Academic Committee was presented for confirmation. After thorough review, the minutes were approved by unanimous consent.
2. The committee discussed the preparation of the academic calendar for the upcoming even semester of the session 2022-23. The proposed calendar was presented, taking into consideration holidays, examination schedules, and other relevant events. It was decided to finalize the calendar and distribute it among the departments.
3. The committee discussed the implementation of the new ERP system, CAMU. The benefits, challenges, and timeline for the implementation were presented. A detailed plan for the rollout, training, and transition to the new system was discussed and approved.
4. The committee addressed the need to upload and maintain student attendance in both the existing University Management System (UMS) and the new CAMU portal. It was decided to streamline the attendance recording process and ensure that attendance data is accurately updated in both systems.
5. The committee discussed the progress on the conduction of slow and advanced learner classes on the basis of the result of the 1st Continuous Internal Evaluation (C.I.E.) for the ongoing academic year.
6. The committee discussed the usage of Information and Communication Technology (ICT) tools such as Nearpod, Mentimeter, CAMU, and PI360. The benefits of integrating these tools into teaching and administrative processes were highlighted. The HOD's were instructed to motivate the faculty members to encourage implement these tools effectively.
7. It is decided that Departments head's will conduct an internal audit in their respective Departments and submit the report to IQAC for imparting quality teaching
8. Any other matter: -No other point raised by any member and the meeting concluded with a vote of thanks to all attendees for their valuable contributions and active participation.

Dr. Nishant Saxena
(Academic committee Coordinator)

Copy to:
Allactionee: for necessary action

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Ref: TI/RC/22-23/18 **Dated 10/10/2022**

Notice

A meeting of the research committee will be held in the conference room on 10th October, 2022 at 3:00 PM. All head of departments and Research Committee members please ensure your presence.

Agenda items regarding:

RC.18.01. Compilation status granted projects.

RC.18.02. Preparation for ICACCM2022.

RC.18.03. Student Start-up ecosystem development

RC.18.04. Review of Research publication and faculty development activities.

Dr. Nishant Saxsena
Director/Chairperson

CC:

- All Head of the department
- Dean, Academics
- All research committee members

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TULA'S DEHRADUN Estd. 2006	**18th Meeting of Research Committee (Minutes of Meeting)**	NAAC GRADE A+ ACCREDITED INSTITUTE HIGHEST RATING AMONGST COLLEGES & UNIVERSITIES IN UTTARAKHAND

Date/Time	**12th October, 2022/03:00 PM**	
Venue:	Conference room	
Minutes were taken by:	Ms. Samiksha	
Chairperson	Dr. Nishant Saxena	
Attendee:	**Design. & Dept.**	**Signature:**
Dr. Nishant Saxena	Dean Academics	
Dr. Sunil Semwal	Dean R&D	
Dr. Tripuresh Joshi	R&D Coordinator	
Dr. R. B. Singh	HoD CSE & MCA	
Dr. Anita Chauhan	HoD (Agriculture)	
Mr. Abhishek Chakravorty	HoD (ECE & EEE)	
Ms. Preeti Kumari	HoD (CIVIL)	
Dr. K. R. Ansari	HoD (GSB)	
Dr. Subhash Ram	Representative(ME)	
Absent:	**Reason**	
None		

Agenda items regarding:

RC.18.01. Compilation status of granted projects.
RC.18.02. Preparation for ICACCM 2022.
RC.18.03. Student Start-up ecosystem development
RC.18.04. Review of Research publication and faculty development activity

Discussion/ Suggestions	**Actions**	
	Actionee	**Due Date**
The Meeting started with the welcome address of the chairperson. The agenda wise discussion is as follows.	-	-
RC.18.01. Utilization Certificate and project completion report with expected outcome need to be submitted by all PIs in R&D cell. Dr. Sunil Semwal with PIs/Co-PIs.	Dr. Sunil Semwal Dean R&D	
RC.18.02. Research Coordinator Dr. Tripuresh briefed the committee about the preparation of ICACCM-2022 the progress is satisfactory.	Dean R&D and R&D Coordinator	

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TULA'S DEHRADUN Estd. 2006	18th Meeting of Research Committee (Minutes of Meeting)	NAAC GRADE A+ ACCREDITED INSTITUTE HIGHEST RATING AMONGST COLLEGES & UNIVERSITIES IN UTTARAKHAND

RC.18.03. Start-up related activities like pitchathon, hackathon and ideathon need to be organized by the CIRE (Centre of Innovation Research and Entrepreneurship) from time to time to motivate the students.	Dean R&D and R&D Coordinator	14/11/2022
RC.18.04. Some activities on "How to Research Paper" and form research group to boost the research output.	All HoD	30/11/2022

Dr. Nishant Saxena
Chairperson

Copy to:
All actionee: for necessary action

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Tula's Institute, Dehradun

Ref: TI/RC/22-23/19 **Dated 03/03/2023**

Notice

A meeting of the research committee will be held in the conference room on 06th March, 2023 at 3:00 PM. All head of departments and Research Committee members please ensure your presence.

Agenda items regarding:

RC.19.01. Status review of UCOST funded project.

RC.19.02. Organization of National level Hackathon.

RC.19.03. Development of the Startup ecosystem.

RC.19.04. Hands-On on Matlab softwares and Other tools.

Anil Kumar

Dr. Anil Dahiya
Director/Chairperson

CC:

- All Head of the department
- Dean, Academics
- All research committee members

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TULA'S DEHRADUN Estd. 2006	**19th Meeting of Research Committee (Minutes of Meeting)**	NAAC GRADE A+ ACCREDITED INSTITUTE HIGHEST RATING AMONGST COLLEGES & UNIVERSITIES IN UTTARAKHAND

Date/Time	6th March, 2023/03:00 PM	
Venue:	IQAC Room	
Minutes were taken by:	Ms. Samiksha	
Chairperson	**Dr. Anil Kumar Dahiya**	
Attendee:	**Design. & Dept.**	**Signature:**
Dr. Anil Kumar Dahiya	Director	Anil Kumar
Dr. Nishant Saxena	Dean Academics	
Dr. Sunil Semwal	Dean R&D	
Dr. Tripuresh Joshi	R&D Coordinator	
Dr. R B Singh	HoD CSE & MCA	
Dr. Anita Chauhan	HoD (Agriculture)	
Mr. Abhishek Chakravorty	HoD (ECE & EEE)	
Ms. Preeti Kumari	HoD (CIVIL)	Preeti
Dr. K R Ansari	HoD (GSB)	
Dr. Subhash Ram	Representative (ME)	
Absent:	**Reason**	
None		

Agenda items regarding:

RC.19.01. Status review of UCOST funded project.
RC.19.02. Organization of National level Hackathon.
RC.19.03. Development of the Startup ecosystem.
RC.19.04. Hands-On on Matlab softwares and Other tools.

Discussion/ Suggestions	**Actions**	
	Actionee	**Due Date**

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Director's Office, Tula's Institute

TULA'S DEHRADUN Estd. 2006	19th Meeting of Research Committee (Minutes of Meeting)	NAAC GRADE A+ ACCREDITED INSTITUTE HIGHEST RATING AMONGST COLLEGES & UNIVERSITIES IN UTTARAKHAND

The Meeting started with the welcome address of the chairperson. The agenda wise discussion is as follows.	-	-
RC.19.01. The progress of the UCOST funded project is presented by Dr. Sunil Semwal, the same will be submitted to UCOST.	Dr. Sunil Semwal Dean R&D	24/03/23
RC.19.02.The national level hackathon proposal has been submitted by Dr. Sunil Semwal, also ensuring the maximum participation for this national level event.	Dr. Tripuresh Joshi	21-22 April 2023
RC.19.03. Start-up related activities like women in startups and also introduce the cutting edge pitchathon, hackathon and ideathon need to be organized by the CIRE (Centre of Innovation Research and Entrepreneurship).	Dean R&D Coordinator	15/06/23
RC.19.04. Events related to Matlab software, Simulink, and other important tools need to be organized in offline and Hands-on mode.	Dean R&D Coordinator	20/6/23

Anil Kumar

Dr. Anil Kumar Dahiya
Director/Chairperson

Copy to:
All actionee: for necessary action

Director
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Tula's Institute, Dehradun
(Feedback Survey)

Student Feedback on Curriculum

Program: B.tech

Branch: CSE

Student Name: Akshay kumar Arya

Roll No: 1901201001

Academic Year / Semester: 2022 - 2023 / 8th sem

Contact No: 6392[illegible]4369

Email Id: akshaykumararyaarya1234@gmail.com

This questionnaire is intended to collect information relating to your satisfaction towards curriculum. The information provided by you will be used as important feedback for quality improvement of the programme of studies/institution.

Directions:

For each item please indicate your level of satisfaction with the following statement by choosing a score between 1 and 5.

(1 – Strongly Disgree, 2 - Disagree, 3 – Neutral, 4 – Agree, 5 – Strongly Agree)

	Curriculum	1	2	3	4	5
1	Curriculum is as per our need and well organized.					
2	Curriculum is aligned with Course Outcomes and Program Outcomes.	✓				
3	Curriculum has good academic flexibility.		✓			
4	Curriculum bridges the gap between industry standards/current global scenarios.				✓	✓
5	Curriculum enhanced employability, encourages entrepreneurship and startups.			✓		✓
6	Curriculum has a good balance between theory and practical.			✓		
7	Curriculum provides opportunity for conducting research, innovation and project related activities.				✓	
8	The contents of the curriculum are in tune with the state/national level examinations in the relevant subject.				✓	
9	The books prescribed/listed as text/reference materials are relevant, updated and appropriate.					✓
10	Curriculum enhances the analytical/problem solving/critical thinking.					✓

Suggestions if any: curricular is well designed

Date 15/06/2023

Signature:

TULA'S INSTITUTE HEAD FEEDBACK DEHRADUN

Director
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Tula's Institute, Dehradun
(Feedback Survey)

Student Feedback on Curriculum

Program: B.TECH

Branch: CSE

Student Name: ANURAG Agarwal

Roll No: 190120101022

Academic Year / Semester: 2023/ 8 th Semester

Contact No: 917337781817

Email Id: ANURAG 190120101022 @gmail.com

This questionnaire is intended to collect information relating to your satisfaction towards curriculum. The information provided by you will be used as important feedback for quality improvement of the programme of studies/institution.

Directions:

For each item please indicate your level of satisfaction with the following statement by choosing a score between 1 and 5.

(1 – Strongly Disgree, 2 - Disagree, 3 – Neutral, 4 – Agree, 5 – Strongly Agree)

	Curriculum	1	2	3	4	5
1	Curriculum is as per our need and well organized.	✓				
2	Curriculum is aligned with Course Outcomes and Program Outcomes.		✓			✓
3	Curriculum has good academic flexibility.					✓
4	Curriculum bridges the gap between industry standards/current global scenarios.					✓
5	Curriculum enhanced employability, encourages entrepreneurship and startups.		✓			
6	Curriculum has a good balance between theory and practical.					✓
7	Curriculum provides opportunity for conducting research, innovation and project related activities.	✓				
8	The contents of the curriculum are in tune with the state/national level examinations in the relevant subject.				✓	
9	The books prescribed/listed as text/reference materials are relevant, updated and appropriate.					✓
10	Curriculum enhances the analytical/problem solving/critical thinking.					✓

Suggestions if any: improve extra curricular activities

Date

15/6/23

TULA'S INSTITUTE HEAD FEEDBACK DEHRADUN

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Signature:

ANURAG

Sample Question paper
of
CIE – I & CIE – II

Tula's Institute

VMSBUTU/UBTER - I Continuous Internal Evaluation

Even Semester (April-2023)

Department-Electrical and Electronics Engineering

NAAC GRADE A+ ACCREDITED INSTITUTE HIGHEST RATING AMONGST COLLEGES & UNIVERSITIES IN UTTARAKHAND

Subject Name with Code: Basic Electrical Engineering EET -01 **Time Duration: 90mts**

Program/Branch/Year: B.Tech/CSE/1st Year **Maximum Marks: 30**

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

a) Illustrate the concept of source conversion. (CO1) (L3)

b) Electrical appliances are connected in parallel because it (CO1) (L2)

a) Is a simple circuit b) draws less current

c) Results in reduced power loss d) makes the operation of appliance

c) Illustrate ohms law and state if there are any conditions. (CO1) (L3)

d) Power absorbed in a pure inductive circuit is zero because (CO2) (L2)

a) Reactive component of current is zero b) active component of current is maximum

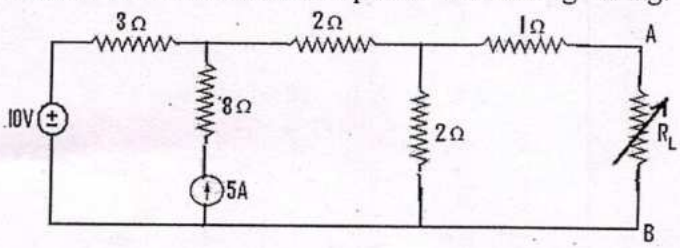
c) Power factor of the circuit is zero d) reactive & active component of current cancel out

e) The R.M.S. value of sinusoidal varying current is _____ that of its average value. (CO2) (L4)

f) Differentiate types of power in electrical systems (CO2) (L4)

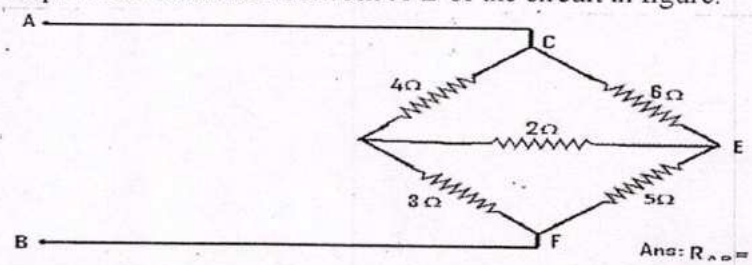
Q No.2 Attempt any three. **(4 X 3 =12)**

a) State and prove maximum power transfer theorem. Using this theorem, find the value of the load resistance RL for maximum power flow through in fig: (CO1)(L 5)



OR

Illustrate the following terminologies. i) Bilateral circuit element. ii) Passive circuit element. iii) Linear circuit elements. Also calculate the equivalent resistance between A-B of the circuit in figure: (CO1) (L4)



b) State and explain the Norton's Theorems with help of example. (CO 1) (L2)

OR

The two branches of parallel circuit draws current I_1 and I_2 such that I_1=100sin wt and I_2 =50 sin (wt-60). What is the total current drawn? (CO2) (L3)

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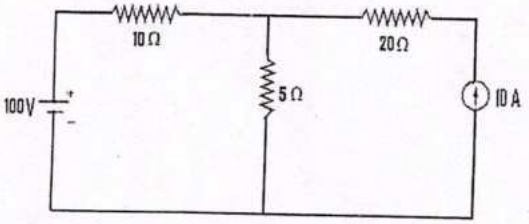
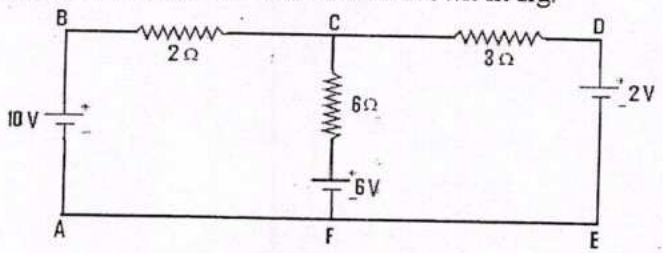
c) Find the currents in all the resistive branches of the circuit shown in fig:
1. KVL 2. KCL (CO1) (L5)



OR

Using loop current method, find the current across 6ohm shown in fig. (CO1) (L5)



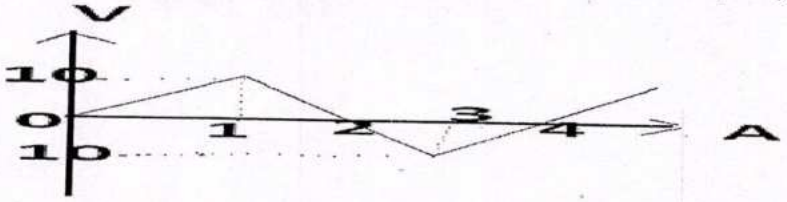
Q No.3 Attempt any three. **(4 X 3 =12)**

a) Derive an expression for the instantaneous current drawn in a pure inductive circuit on application of a sinusoidal voltage and show that current lags behind voltage by a quarter cycle. (CO2) (L3)

OR

Show that the average power demand, in a purely inductive A.C. circuit is Zero. (CO2) (L3)

b) Find average, RMS, Form factor and Peak factor of given waveform: (CO2) (L5)



OR

Illustrate the types of power in the electrical system. An inductive coil is connected to a supply of 250 Volt at 50 Hz and takes a current of 5Amp. The coil dissipates 750W. Calculate the resistance and inductance of the coil and power factor of the coil. (CO2) (L4)

c) Explain the ideal and practical voltage and current sources (CO 1) (L4)

OR

An alternating voltage is given by V= 141.4 sin 314t. Find (1) frequency (2) RMS value (3) Average value (4) Instantaneous value of voltage when t is 3msec (5) time taken for the voltage to reach 100V for the first time after passing through zero value? (CO2)(L3)

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VMSBUTU/UBTER -II Continuous Internal Evaluation
Even Semester (May-2023)
Department of Computer Science Engineering

NAAC GRADE A+ ACCREDITED INSTITUTE
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Subject Name with Code: Basic Electrical Engg (EET-001) **Time Duration: 90min**
Program/Branch/Year: B.TECH/CSE/1st YEAR **Maximum Marks: 30**

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

a). The circuit is said to be in resonance if the current is ..... With the applied voltage. (CO3)(Level 1)

1. In phase 2. 90° out of phase 3. Out of phase 4. 45° out of phase

b). The power factor is unity for the _____ resonant circuit. (CO3)(Level 1)

1. Series 2. Parallel 3. Both 1 & 2 4. None is correct

c). The property of a magnetic circuit which opposes the formation of the flux is known as (CO4) (Level 1)

1. Reactance 2. Mmf 3. Permeance 4. Reluctance.

d) A transformer transforms ..... (CO4)(Level 1)

1. Current 2. Voltage 3. Voltage & current 4.frequency

e). Cells are connected in parallel in order to (CO5) (Level 1)

1. Increase the voltage available. 2. Reduce cost of wiring.
3. Increase the current available. 4. Reduce the time required to fully charge them after use.

f). Rating of fuse wire is expressed in ..... (CO5)(Level 1)

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

a) Explain the construction and working of single phase transformer. (CO3) (Level 2)

OR

Compare the similarities and dissimilarities between electric and magnetic circuits?(CO3) (Level 3)

b) Explain the constructional and operational feature of a DC machine with the help of neat diagram. (CO4) (Level 3)

OR

State the Types of DC motors. Discuss constructional details of any type of DC motor.(CO4) (Level 4)

c) Illustrate about ELCB and also write the application of it. (CO5) (Level 3)

OR

Illustrate the function and advantages of earthing. (CO5) (Level 3)

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Department of Computer Science Engineering

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

a) Describe the various losses in a transformer and derive the condition of its maximum efficiency (CO3) (Level 4)

OR

Ina 25kVA, 2000 V/200 V transformer the iron and copper losses are 200 W and 400 W respectively. Calculate the efficiency at half –full load and 0.8 power factor lagging. (CO3) (Level 4)

b) Enlist the various parts of DC machine and explain the function of each part. (CO4) (Level 3)

OR

Derive the EMF equation of transformer and explain the voltage transformation ratio.(CO4) (Level 4)

c) An electric iron is rated 250 V, 500 W. What current will it take when connected to 250 V supply. If the iron is used for one hour daily for 30 days, what will be the monthly electricity bill at Rs 5 per unit? (CO5) (Level 4)

OR

Classify the different types of wires and cables in electrical installation. (CO5) (Level 2)

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Sample Course File

COURSE RECORD

Academic Year 2022 -2023 (EVEN)

Faculty Name:	**Vrij Mohan Vidyarthi**
Course Title:	**Basic Electrical Engineering (EET-001)**
Semester:	**II**
Department:	**Electrical & Electronics Engineering**

Director
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1. Institute's Vision & Mission
2. Department's Vision & mission
3. Academic Calendar
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9. Individual Timetable
10. List of Students
11. Lecture Plan
12. Summary of Compensatory / Extra Classes Taken
13. Question Bank(Module-wise) & Previous Years University Question Papers
14. Assignment cum Tutorial Sheet Questions
15. Class Tests
16. Continuous Internal Evaluations
17. Solution of Question Papers
18. Result Analysis(I CIE)
19. Advance and slow learner identification
20. Attainment - CO

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1. Institute's Vision & Mission

Institute's Vision

To emerge as an academic centre producing world class professionals, promoting innovation and research.

Institute's Mission

IM-01: To promote intellectual and skilled human capital generating employment and Entrepreneurship.

IM-02: To be educational centre of excellence of multi ethnicity and diversity.

IM-03: To establish as a technology driven teaching learning institution.

IM-04: To provide world class platform for research and innovation.

IM-05: To inculcate social, environmental, heritage values.

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2. Department Vision & Mission

Vision

To equip students with skills and strong conceptual understanding in applied sciences and basic engineering domains to pursue higher learning.

Mission

1. To enable engineering students master the fundamental concepts of applied sciences.
2. To impart essential knowledge through fundamental subjects related to various engineering disciplines.
3. To prepare students for their successful career based on strong moral and ethical principles.
4. To develop lifelong learning abilities and developing understanding of social requirements and problems from the outset of a professional life.
5. To build strong outreach and communication skills so that students can effectively communicate scientific knowledge to a variety of stakeholders and audiences.

Mapping of Department's Missions with Institute's Missions

	IM-01	IM-02	IM-03	IM-04	IM-05
DM-01	Y	-	-	-	-
DM-02	-	-	Y	-	-
DM-03	-	-	-	-	Y
DM-04	-	-	-	-	Y
DM-05	Y	-	-	-	-

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ACADEMIC CALENDAR

Even Semester **Session: 2022-2023**

S.No.	Particulars	Date					Responsibility
1.	**Time Table** (a) Display on Notice Boards (b) Distribution to concerned Teachers	12 February 2023					Respective HoD
2.	**Distribution of Provisional class roll lists to teachers**	14 February 2023					Registrar
3.	**Commencement of Classes**						Concerned HoD
	VMSB UTU & UBTER Programs	15 February 2023					
	SDSUV Programs	BA(H) JMC	BCA	B.COM(H)	BBA	B.Sc.(AG)	
		27 March 2023			29 March 2023	06 April 2023	
4.	**1st Test Series***	UTU	UBTER		SDSUV		Exam committee
		11-13 April 2023			16-19 May 2023		
5.	**Cultural festival : SANSKRITI**	12-13 May 2023					Event Convener
6.	**2nd Test Series ***	UTU	UBTER		SDSUV		Exam committee
		16-19 May 2023			21-24 June 2023		
7.	**Theory Examinations*** Collection of Admit Cards	As per University notification					Registrar/Exam committee

***May be revised as per UTU/SDSUV/UBTER schedule.**

(Dean Academics)

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- Be educational centre of excellence of multi ethnicity and diversity.
- Establish as technology driven teaching learning institution.
- Provide world class platform for research and innovation.

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4. PROGRAM OUTCOMES (PO's)

PO-01: Engineering Knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO-02: Problem Analysis: Identify, formulate, research literature, and analyze complex Engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO-03: Design/development of Solutions: Design solutions for complex engineering problems and design system components or processes that meet t h e specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO-04: Conduct Investigations of Complex Problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO-05: Modern Tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO-06: The Engineer and Society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO-07: Environment and Sustainability: Understand the impact of the professional Engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO-08: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO-09: Individual and Team Work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO-10: Communication: Communicate effectively on complex engineering activities with the

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engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO-11: Project Management and Finance: Demonstrate knowledge and understanding of the Engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO-12: Life-long Learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

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5. Course Learning Objectives:

To explore the engineering knowledge of Electrical, Problem analysis, Design development and solution, Investigation of complex problems, Modern tool usage, Engineer and society, Environment and sustainability. To comprehend the effect of electric and magnetic field in materials,3-phase AC electrical circuits. To understand the Concept of AC/DC machines.

COURSE OUTCOMES:

CO NO.	CO Description	Mapping of BL to CO	Mapping of Module to CO	PO-Addressed by CO	Assessment Tool (s) to be used to attain CO
CO-01	**Apply** the knowledge of basic laws and concepts pertaining to different types of DC & AC supply systems	BL-03	1,2	CO-01 maps to PO-01, PO-02, PO-5,PO 10	Examination/ Assignment/ Quiz
CO-02	**Apply** the Electrical installation systems concepts in real world implementation	BL-03	5	CO-02 maps to PO-01, PO-02, PO-5,PO 7	Examination /Assignment/ Field work
CO-03	**Categorize** the working of different types of electromechanical energy conversion systems under different working conditions	BL-04	3,4	CO-03 maps to PO-01, PO-02, PO-5,PO 10	Examination/ Assignment
CO-04	**Analyze** the solutions of problems related to the different network structures as an individual or in a team	BL-04	1,2	CO-04 maps to PO-01, PO-02, PO-4,PO 8	Examination/ Assignment Tutorial
CO-05	**Evaluate** the problems of various Electromechanical energy conversion systems with the variation of the construction and loading parameters	BL-05	3,4	CO-05 maps to PO-01, PO-02, PO-5	Examination/ Assignment Tutorial

Faculty Coordinator

HoD Signature

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6. COURSE SYLLABUS

Basic Electrical Engineering (EET-001)

MODULE	SYLLABUS	MAPPING WITH CO	MAPPING WITH BTL
MODULE -I	DC Circuits Electrical circuit elements (R, L and C), voltage and current sources, Kirchoff current and voltage laws, analysis of simple circuits with dc excitation. Superposition, Thevenin, Norton Theorems and maximum power transfer theorem. Star to Delta conversion. Time-domain analysis of first order RL and RC circuits.	CO-01,04	L-4
MODULE -II	AC Circuits Representation of sinusoidal waveforms, peak and rms values, phasor representation, real power, reactive power, apparent power, power factor. Analysis of single-phase ac circuits consisting of R, L, C, RL, RC, RLC combinations (series and parallel), resonance. Three phase balanced circuits, voltage and current relations in star and delta connections and power measurement	CO-01,04	L-4
MODULE -III	Magnetic circuits and Transformers Magnetic circuits and materials, BH characteristics, Basic laws of electromagnetism, single phase transformer. ideal and practical transformer, equivalent circuit, losses in transformers, regulation and efficiency. Introduction to measurements: PMMC and MI meters	CO-03,05	L-5
MODULE -IV	Electrical Machines Construction and working principle of DC machines, Types of DC machine, Generation of rotating magnetic fields, Three-phase and single-phase induction motorConstruction, Classification and Principle of Operation, Construction and working principle of synchronous generators	CO-03,05	L-5
MODULE -V	Electrical Installations Generalized layout of Power system, Standard transmission and Distribution Voltages, Concept of Grid. Introduction to LT Switchgear: Switch Fuse Unit (SFU), MCB, ELCB, MCCB, Types of Wires and Cables, Earthing. Types of Batteries, Important Characteristics for Batteries. Elementary calculations for energy consumption	CO-02	L-3

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REFERENCE BOOKS

1. D.P. Kothari & I.J. Nagrath, Basic Electrical Engineering, Tata McGraw Hill, latest edition.
2. S.N. Singh , Basic Electrical Engineering, P.H.I.,2013
3. M.S. Sukhija, T. K. Nagsarkar, Basic Electrical and electronics engineering, Oxford University press, 2012
4. C.L. Wadhwa, Basic Electrical Engineering. New Age International.
5. B.L. Theraja& A.K Theraja Textbook of Electrical Technology - Vol. 1, S. Chand Publication
6. E. Hughes & I.M. Smith Hughes Electrical Technology Pearson
7. Vincent Del Toro Electrical Engineering Fundamentals

NPTEL & PPT LINK:

1. https://nptel.ac.in/courses/108108076
2. **https://archive.nptel.ac.in/courses/108/105/108105112/**

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Director
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7: CO PO and CO-PSO MAPPING

BRANCH:	EEE/B.Tech I			SESSION:	2022-23
COURSE:	B.TECH	YEAR:	I	SEMESTER:	II
SUBJECT:	Basic Electrical Engineering			SUBJECT CODE:	EET-001

CO PO AND CO-PSO MAPPING

CO #	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
EET001.1	3	1	-	-	1	-	-	-	-	1	-	-	-	-	-
EET001.2	2	2	-	-	2	-	2	-	-	-	-	-	-	-	-
EET001.3	2	1	-	-	1	-	-	-	-	1	-	-	-	-	-
EET001.4	3	1	-	1	-	-	-	1	-	-	-	-	-	-	-
EET001.5	1	2	-	-	1	-	-	-	-	-	-	-	-	-	-
WT. AVG	2.20	1.40		1.00	1.25		2.00	1.00		1.00					
Overall Mapping of Subject															1.41

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COURSE TITLE:	Basic Electrical Engineering										COURSE CODE:			EET-001	
STRENGTH OF CO PO AND CO-PSO CORRELATION MAPPING															
CO #	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
EET001.1	3	1	-	-	1	-	-	-	-	1	-	-	-	-	-
EET001.2	2	2	-	-	2	-	2	-	-	-	-	-	-	-	-
EET001.3	2	1	-	-	1	-	-	-	-	1	-	-	-	-	-
EET001.4	3	1	-	1	-	-	-	1	-	-	-	-	-	-	-
EET001.5	1	2	-	-	1	-	-	-	-	-	-	-	-	-	-
WT. AVG	2.2	1.4		1	1.25		2	1		1					
Overall Mapping Strength of Course															1.41

EXPLANATION OF STRENGTH OF CO-PO AND CO-PSO CORRELATION MAPPING USING PERFORMANCE INDICATORS

COURSE TITLE:	Basic Electrical Engineering										COURSE CODE:			EET-001	
CO #	PO-01			PO-02			PO-03			PO-04			PO-05		
	T.PIs.	M.PIs	ML	T.PIs.	M.PIs	ML	T.PIs.	M.PIs	ML	T.PIs.	M.PIs	ML	T.PIs.	M.PIs	ML
EET001.1	5	4	3	14	4	1	13		-	8		-	6	1	1
EET001.2	5	2	2	14	5	2	13		-	8		-	6	3	2
EET001.3	5	2	2	14	3	1	13		-	8		-	6	1	1
EET001.4	5	4	3	14	4	1	13		-	8	2	1	6		-
EET001.5	5	1	1	14	7	2	13		-	8		-	6	1	1

CO #	PO-06			PO-07			PO-08			PO-09			PO-10		
	T.PIs.	M.PIs	ML	T.PIs.	M.PIs	ML	T.PIs.	M.PIs	ML	T.PIs.	M.PIs	ML	T.PIs.	M.PIs	ML
EET001.1	2		-	4		-	3		-	7		-	7	1	1
EET001.2	2		-	4	2	2	3		-	7		-	7		-
EET001.3	2		-	4		-	3		-	7		-	7	1	1
EET001.4	2		-	4		-	3	1	1	7		-	7		-
EET001.5	2		-	4		-	3		-	7		-	7		-

CO #	PO-11			PO-12			PSO-1			PSO-2			PSO-3		
	T.PIs.	M.PIs	ML	T.PIs.	M.PIs	ML	T.PIs.	M.PIs	ML	T.PIs.	M.PIs	ML	T.PIs.	M.PIs	ML
EET001.1	5		-	6		-	23		-	9		-	17		-
EET001.2	5		-	6		-	23			9		-	17		
EET001.3	5		-	6		-	23			9		-	17		
EET001.4	5		-	6		-	23			9		-	17		
EET001.5	5		-	6		-	23			9		-	17		

TERMINOLOGY USED IN DETERMINING STRENGTH OF CO-PO AND CO-PSO CORRELATION MAPPING

TC	Total Number of Competencies in a given PO.
TPI	Total Number of Performance Indicatores in a given PO.
TMPI	Total Number of mapped PI out of all Pis
%MPI	Pencetage of Mapped PI=(TMPI/TPI)*100
ML	Mapped Level

RUBRICS FOR STRENGTH OF CO-PO AND CO-PSO CORRELATION MAPPING

MAPPED LEVEL (ML)	% OF MAPPED PERFORMANCE INDICATORS(MPIs)
3	67-100
2	34-66
1	Jan-33
-	< 1

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8: Gap Analysis

Subject: Basic Electrical Engineering (EET-001) **Session:** 2022-2023

Gap Identification:

1. **Basic Laws Electrostatics and Magneto statics**
2. **Basic layout of conventional power plants**

Content:

- Electrostatic Field in a Vacuum , A Conductor in an Electrostatic Field Energy of Electric Field, Direct Current, Magnetic Field in a Vacuum,
- Electromagnetic Induction, Faraday's law of electromagnetic induction
- General layout of

  a) Thermal power plant.

  b) Hydro power plant

  c) Nuclear Power plant,

- Introduction to tariffs.

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Attendance Sheet (Filling the Identified Gap)
SECTION-B

S. No	Roll No	Name	15/02/23	16/02/23	17/02/23	20/2/23		
1	220120101063	DIVYANSHU JAISWAL	P	P	P	P		
2	220120101064	ELEM DEBBARMA	A	P	P	P		
3	220120101065	Gaurav Kumar	P	P	A	P		
4	220120101066	Gaurav Panwar	P	P	P	P		
5	220120101067	Gaureesh B Tomar	P	P	P	P		
6	220120101068	Hans Raj Singh	P	A	P	P		
7	220120101069	Hardik Choudhary	A	P	P	P		
8	220120101070	Harsh	A	P	P	P		
9	220120101071	HARSH KUMAR	A	P	A	P		
10	220120101072	Harsh Narayan Pandey	P	P	A	P		
11	220120101073	HARSH RAJ	P	P	A	P		
12	220120101074	HARSH RAJ	P	P	P	P		
13	220120101075	Harshit kumar	A	P	P	P		
14	220120101076	Himanshu bisht	P	A	P	P		
15	220120101077	Himanshu kumar	P	P	A	A		
16	220120101078	Himanshu Tyagi	P	P	P	P		
17	220120101079	himanshu vardhan raj	A	P	A	P		
18	220120101080	Hrishavh chandrawanshi	P	P	P	P		
19	220120101081	Ilma fazil	A	P	P	A		
20	220120101082	ISHA SINGH	P	P	A	P		
21	220120101083	ISHAAN VATSAL	A	P	P	P		
22	220120101084	JATIN SINGH BISHT	P	P	P	P		
23	220120101085	JAY RAJ	A	P	P	A		
24	220120101086	Jay shankar patel	P	P	P	P		
25	220120101087	Kamal Singh Sugra	P	P	P	P		
26	220120101088	KARN KUMAR GAUTAM	A	A	P	A		
27	220120101089	KARTIK PANDEY	P	P	P	P		
28	220120101090	KHUB LAL MANDAL	A	A	P	P		
29	220120101091	KISHANKUMAR	P	P	P	A		
30	220120101092	KRISHNANSH KACKAR	P	P	A	P		
31	220120101093	KUMAR SONU NIGAM	P	P	P	P		
32	220120101094	LAKSHYA TYAGI	A	P	A	P		

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33	220120101095	MADHULIKA CHOUDHARY	P	P	P	P		
34	220120101096	Mahesh pandit	A	P	P	P		
35	220120101097	MANISH DOGRA	P	P	P	P		
36	220120101098	Manshi kumari	A	P	P	P		
37	220120101099	Md Ashraful Haque	P	P	P	A		
38	220120101100	MOHAMMAD ANAS KHAN	P	P	P	P		
39	220120101101	Mohd Aasif	A	P	A	P		
40	220120101102	Mohd Aatif	A	P	A	P		
41	220120101103	Mohd Anas	A	P	P	P		
42	220120101104	MOHD ANAS	P	A	P	P		
43	220120101105	MUHEET MEHRAJ	P	P	P	P		
44	220120101106	MUKESH SINGH CHAUHAN	P	P	P	P		
45	220120101107	MUKUL KUMAR	A	A	P	P		
46	220120101108	MUNNA KUMAR	P	P	P	P		
47	220120101109	MUSHEER ALAM	A	P	A	A		
48	220120101110	NEERAJ PANDEY	P	A	P	P		
49	220120101111	Nitin Kumar	P	P	P	A		
50	220120101112	Nitish	P	A	P	P		
51	220120101113	Om Singh	P	P	P	A		
52	220120101114	PAWAN KUMAR	P	P	A	P		
53	220120101115	PIYUSH KESHRI	P	P	P	P		
54	220120101116	PIYUSH KUMAR PANIGRAHI	P	P	P	A		
55	220120101117	PRANAV KUMAR	P	A	P	P		
56	220120101118	PRASHANT SINGH	A	P	P	A		
57	220120101119	PRINCE KUMAR	A	P	P	P		
58	220120101120	PRIYANK SINGH	A	A	A	P		
59	220120101121	PULKIT FAUZDAR	P	P	P	P		
60	220120101122	Rabina kumari sah	P	P	P	P		

Signature of HOD with date &seal:.....

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9. INDIVIDUAL TIME TABLE

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TULA'S INSTITUTE, Dehradun
Even Semester (Session 2022-2023) Time Table
Department of ECE & EEE

Faculty Name : Mr Vrij Mohan **Session: 2022-23**

Faculty Code: VM

Day/Period	I 9:40-10:30AM	II 10:30-11:20AM	III 11:30-12:20PM	IV 12:20-01:10PM	V 01:10-02:00PM	VI 02:00-02:50PM	VII 02:50-03:40PM	VIII 03:40-04:30PM
Monday		IV-E BEET 801 H-206			I-B EET-001 D-202		I-B EEP-201 F-104	
Tuesday	I-B EET-001 D-202		IV-E BEET 801 H-206				I-B EEP-201 F-104	
Wednesday				IV-E BEET 801 H-206			I-B EET-001 D-202	
Thursday			IV-E BEET 801 H-206		I-B EET-001 D-202		IV-E BEEP 801(P) F-101	
Friday		IV-E BEET 801 H-206			I-B EET-001 D-202		III-E BEE(607(P) F-101	
Saturday								

S.No	Subject Code	Course Name	Section Code	Section Name
1	BEET 801	Advanced control system	IV-E	B.Tech EEE 4th Year
2	BEEP 801	Advanced control system lab	IV-E	B.Tech EEE 4th Year
3	EET& EEP 001	Basic Electrical Eengineering	I- B	B.Tech CSE 1st Year
4	BEE(607(P)	Minor Project	III-E	B.Tech EEE 3rd Year

Time Table Coordinator

HoD ECE & EEE

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10. List of Students: CSE (Sec- B)

Group- G1

SR. NO	Roll No.	Student Name
1	220120101063	DIVYANSHU JAISWAL
2	220120101064	ELEM DEBBARMA
3	220120101065	Gaurav Kumar
4	220120101066	Gaurav Panwar
5	220120101067	Gaureesh B Tomar
6	220120101068	Hans Raj Singh
7	220120101069	Hardik Choudhary
8	220120101070	Harsh
9	220120101071	HARSH KUMAR
10	220120101072	Harsh Narayan Pandey
11	220120101073	HARSH RAJ
12	220120101074	HARSH RAJ
13	220120101075	Harshit kumar
14	220120101076	Himanshu bisht
15	220120101077	Himanshu kumar
16	220120101078	Himanshu Tyagi
17	220120101079	himanshu vardhan raj
18	220120101080	Hrishavh chandrawanshi
19	220120101081	Ilma fazil
20	220120101082	ISHA SINGH
21	220120101083	ISHAAN VATSAL
22	220120101084	JATIN SINGH BISHT
23	220120101085	JAY RAJ
24	220120101086	Jay shankar patel
25	220120101087	Kamal Singh Sugra
26	220120101088	KARN KUMAR GAUTAM
27	220120101089	KARTIK PANDEY
28	220120101090	KHUB LAL MANDAL
29	220120101091	KISHANKUMAR
30	220120101092	KRISHNANSH KACKAR

Group- G2

SR. NO	Roll No.	Student Name
31	220120101093	KUMAR SONU NIGAM
32	220120101094	LAKSHYA TYAGI
33	220120101095	MADHULIKA CHOUDHARY
34	220120101096	Mahesh pandit
35	220120101097	MANISH DOGRA
36	220120101098	Manshi kumari
37	220120101099	Md Ashraful Haque
38	220120101100	MOHAMMAD ANAS KHAN
39	220120101101	Mohd Aasif
40	220120101102	Mohd Aatif
41	220120101103	Mohd Anas
42	220120101104	MOHD ANAS
43	220120101105	MUHEET MEHRAJ
44	220120101106	MUKESH SINGH CHAUHAN
45	220120101107	MUKUL KUMAR
46	220120101108	MUNNA KUMAR
47	220120101109	MUSHEER ALAM
48	220120101110	NEERAJ PANDEY
49	220120101111	Nitin Kumar
50	220120101112	Nitish
51	220120101113	Om Singh
52	220120101114	PAWAN KUMAR
53	220120101115	PIYUSH KESHRI
54	220120101116	PIYUSH KUMAR PANIGRAHI
55	220120101117	PRANAV KUMAR
56	220120101118	PRASHANT SINGH
57	220120101119	PRINCE KUMAR
58	220120101120	PRIYANK SINGH
59	220120101121	PULKIT FAUZDAR
60	220120101122	Rabina kumari sah

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11. COURSE PLAN: LECTURE PLAN & DELIVERY SCHEDULE

Course Name: Basic Electrical Engineering **Course Code: EET-001**

SECTION -B

Lecture Plan				Lecture Delivered	
No	Date	LP No.	Topic	Date	Methodology
1.	15/2/23	L-1	Basics of Electrical Technology-Fundamentals	15/2/23	Board & marker
2.	16/2/23	L-2	Basics of Electrical Technology-Fundamentals	16/2/23	Board & marker
3.	17/2/23	L-3	Basics of Electrical Technology-Fundamentals	17/2/23	Board & marker
4.	20/2/23	L-4	Basics of Electrical Technology-Fundamentals	20/2/23	Board & marker
5.	21/2/23	L-5	Ohms Law, KVL & KCL	21/2/23	Board & marker
6.	22/2/23	T-1	Numericals- KVL with Voltage and current sources(	22/2/23	Board & marker
7.	23/2/23	L-6	Mesh analysis with numericals	27/2/23	Board & marker
8.	24/2/23	L-7	Nodal analysis with analysis	28/2/23	Board & marker

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9.	27/2/23	L-8	Superposition theorem with numericals	03/03/23	White Board & marker
10.	28/2/23	L-9	Thevenins theorem with numericals	06/3/23	Board & marker
11.	1/3/23	L-10	Nortons theorem with numericals	10/3/23	Board & marker
12.	2/3/23	L-11	Maximum power transfer theorem with numerical problems	13/3/23	Board & marker
13.	3/3/23	L-12	Star to delta and delta to star conversion	14/3/23	Board & marker
14.	6/3/23	L-13	Transient analysis(RL And RC series ckt)	14/3/23	Board & marker
15.	10/3/23	L-14	AC fundamentals	16/3/23	Board & marker
16.	13/3/23	T-2	Average, RMS , Form & peak factor calculations	17/3/23	Board & marker
17.	14/3/23	L-15	Phasor algebra – A C quantities	20/3/23	Board & marker
18.	15/3/23	L-16	Series ckt – R, L C(Purely)	21/3/23	Board & marker
19.	16/3/23	L-17	Series RL ckt with. Numericals, Series RC ckt with. numericals	22/3/23	Board & marker
20.	17/3/23	L-18	Series RLC ckt with Resonance	23/3/23	Board & marker
21.	20/3/23	L-19	Parallel RLC ckt with resonance	24/3/23	Board & marker
22.	21/3/23	L-20	Numericals- Resonance and Series ckts	25/3/23	White Board & marker

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23.	22/3/23	L-21	Three phase ckts- Star & Delta Ckts	27/3/23	Board & marker.
24.	23/3/23	L-22	Power measurement – Two wattmeter method with PF derivation	28/3/23	Board & marker
25.	24/3/23	T-3	Numericals- Star & Delta three phase ckts	29/3/23	Board & marker.
26.	27/3/23	L-23	Numericals- Power measurement in the three phase ckts	31/3/23	Board & marker
27.	28/3/23	L-24	Types of LT switchgears- Fuse & MCB	03/4/23	PPT
28.	29/3/23	L-25	Types of LT switchgears-ELCB & MCCB	04/4/23	PPT
29.	31/3/23	L-26	Wires and cables in electrical system	04/4/23	PPT
30.	3/4/23	L-27	Power Factor improvement methods	06/4/23	PPT Board & marker
31.	4/4/23	L-28	Earthing and its types	06/4/23	PPT
32.	5/4/23	L-29	Secondary storage batteries	07/4/23	PPT
33.	6/4/23	T-4	Basic Numericals- Power and energy	07/4/23	Board & marker
34.	7/4/23	L-30	Magnetic ckts- Basic terminologies	17/4/23	white Board & marker
35.	10/4/23	L-31	Comparison – Electric and magnetic ckt	18/4/23	Board & marker
36.	14/4/23	L-32	BH curve and formation of hysteresis loop	19/4/23	Board & marker

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37.	17/4/23	L-33	Types of magnetic materials	20/4/23	PPT
38.	18/4/23	L-34	Numerical- Magnetic ckts	21/4/23	Board & marker
39.	19/4/23	L-35	Single phase transformers- Construction and working	26/4/23	PPT
40.	20/4/23	L-36	Phasor diagram of single phase transformers	27/4/23	white Board & marker
41.	21/4/23	L-37	Phasor diagram of single phase transformers Continued	27/4/23	Board & marker
42.	24/4/23	L-38	Equivalent ckt of single phase transformer	28/4/23	Board & marker
43.	25/4/23	L-39	Losses in the single phase transformer	28/4/23	Board & marker
44.	26/4/23	L-40	OC and SC test in single phase transformer	01/5/23	Simulation & virtual experimental
45.	27/4/23	L-41	Three phase transformers- Construction	02/5/23	PPT
46.	28/4/23	L-42	Three phase transformers- Construction-Configuration	03/5/23	PPT
47.	1/5/23	T-5	Numerical- Single phase transformers	04/5/23	Board & marker
48.	2/5/23	L-43	DC machines – Construction and working principles	05/5/23	PPT
49.	3/5/23	L-44	Types of armature winding and EMF equation of DC generator	08/5/23	Board & marker

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50.	4/5/23	L-45	Types of DC generator	09/5/23	PPT
51.	4/5/23	L-46	DC generator characteristics	09/5/23	PPT
52.	5/5/23	L-47	DC motor – Types and significance of back emf, DC motor – Torque equation derivation	10/5/23	Board & marker
53.	8/5/23	L-48	DC motor – Torque equation derivation	11/5/23	Board & marker
54.	8/5/23	L-49	DC motor characterises	15/5/23	Board & marker
55.	9/5/23	L-50	Three phase induction – Principle and construction,	15/5/23	PPT
56.	10/5/23	L-51	Characteristics of three phase induction motors	16/5/23	Board & marker
57.	11/5/23	L-52	Single phase induction motor- Construction & working principle	18/5/23	Board & marker
58.	15/5/23	L-53	Types of starting methods of single phase induction motor,	19/5/23	Board & marker
59.	22/5/23	L-54	Synchronous machines- Construction and working principles, Starting methods of synchronous motor	23/5/23	PPT Board & marker

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60.	23/5/23	L-55	REVISION CLASSES	24/5/23	Board member Discussion
61.					
Total Classes 60			Planned: 55	Delivered: 57	

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12. Summary of Compensatory & Extra Classes Taken

S.N.	Month	Extra Class		Leave Details		
		Date	LP No.	Date of CL/EL/OD	Date of Compensatory Class taken	LP No.
1.	February			11/2/23	–	
2.						
3.						
4.						
5.						
6.						
7.						
8.	March	14/3/23	L-13	18/3/23	–	
9.						
10.						
11.						
12.						
13.						
14.						
15.	April	04/4/23	L-26			
16.		6/4/23	L-28			
17.		7/4/23	T-4			
18.		27/4/23	L-37			
19.						
20.						
21.						
22.	May	9/5/23	L-56	14/5/23	–	
23.						
24.						
25.						
26.						
27.						

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Question Bank

Director
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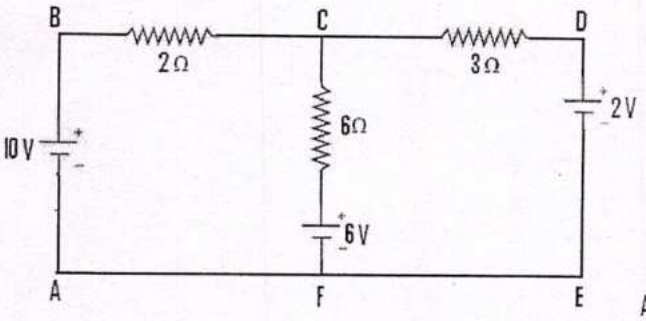
Question Bank
Basic Electrical Engineering
EET-001
Module- 1(DC Circuit Analysis)

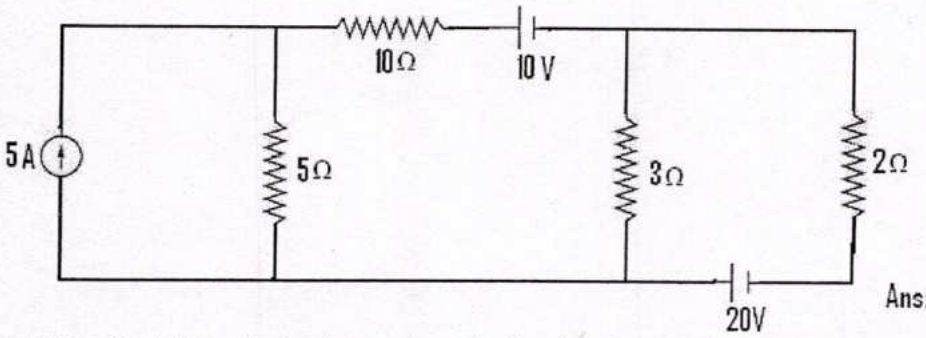
Long answer questions

Q1. Using loop current method, determine the current I_1& I_2 shown in fig. [CO 4, CO1] [L 3]



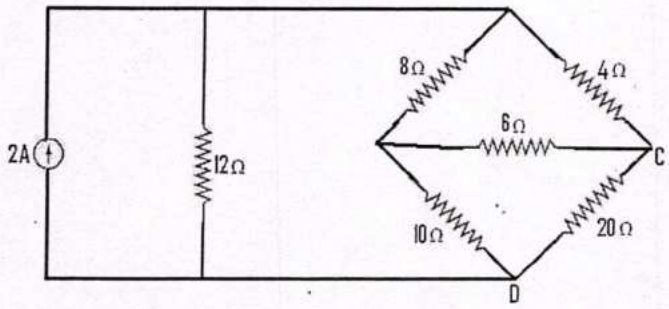
Ans: $I_1 = 1.67A$, $I_2 = 1.56A$

Q2. Determine the current and voltage across the 2ohm resistance in fig. [CO 4, CO1] [L 3]



Ans: $I_{2\Omega} = 5A$, $V_{2\Omega} = 10V$

Q3. Using Nodal Analysis, determine V_{cd} for the circuit shown in fig. [CO 4, CO1] [L 3]



Ans: $V_{CD} = 7.50V$

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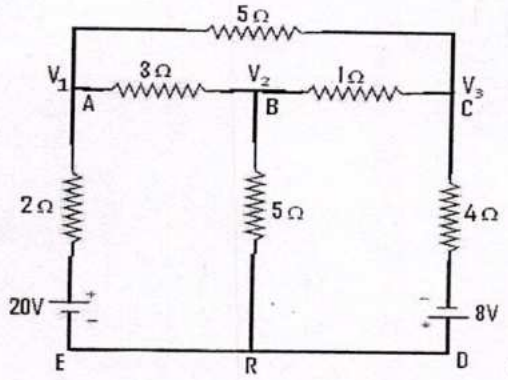
Q4. Use Nodal Analysis to determine the current in various resistors of the circuit shown in fig. [CO 4, CO1] [L 3]

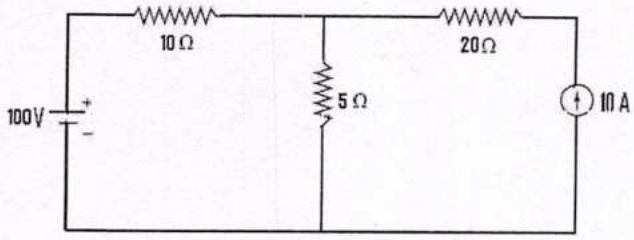


Ans: AE=3.98A, AB=2.32A
BC=1.3A, AC=1.65A
CD=2.95A, BR=1.02A

Q5. Determine the currents in all the resistive branches of the circuit shown in fig: [CO 4, CO1] [L 3]

(i) KVL

(ii) KCL



Ans: $I_{10\Omega} = 3.34A$, $I_{20\Omega} = 10A$, $I_{5\Omega} = 13.34A$
$I_1 = 3.33A$, $I_2 = 13.34A$, $I_3 = 10A$

Q6. Replace the network of the circuit in fig. to the left of the terminals ab by its Thevenin's equivalent circuit. Hence determine I. [CO 4] [L 4]

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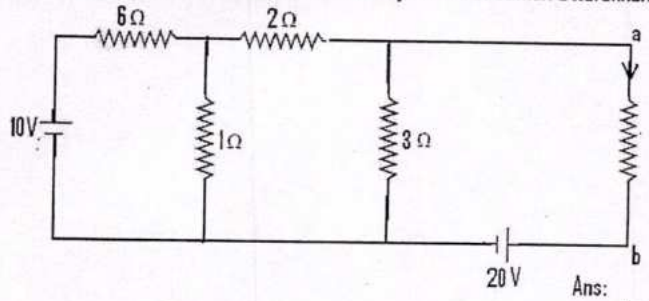
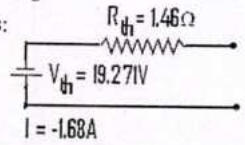
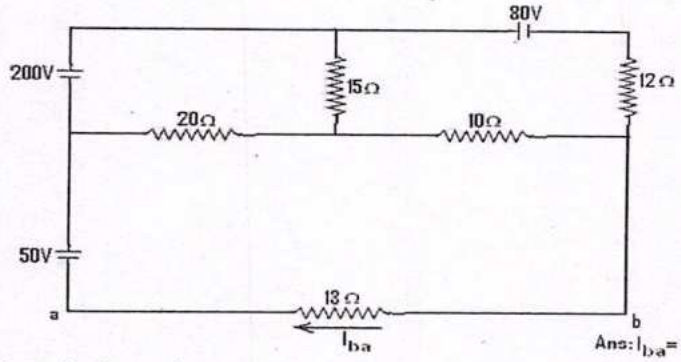


Ans:

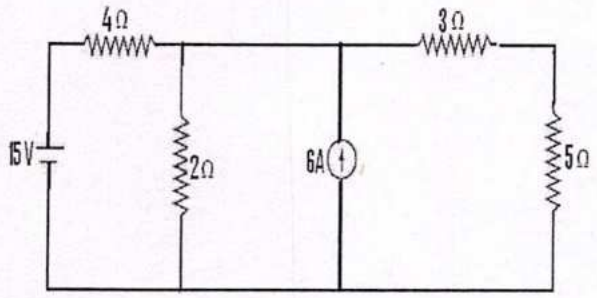


Q7. Using Thevenin theorem calculate current in 13ohm resistance in fig: [CO 4] [L 4]



Ans: I_{ba} = 8.27A

Q8. Calculate the current following through the 5 ohm resistor in the network of fig: by using Thevenin Theorem. [CO 4] [L 4]



Ans: $I_{5\Omega}$ = 1.39A

Q9. The resistance of various arms of a bridge are given as in fig. The battery has an emf of 2.0V and negligible internal resistance. Calculate the value and direction of current in BD using Thevenin Theorem only. [CO 4] [L 4]

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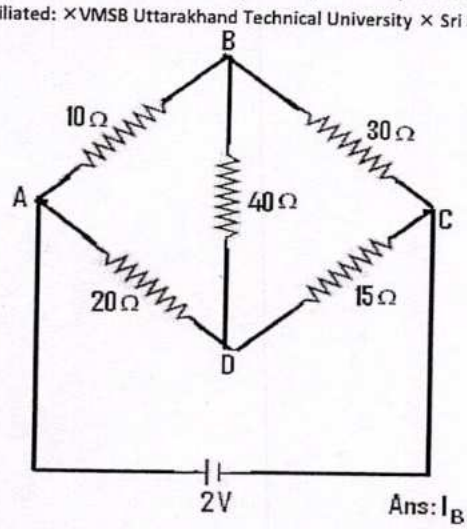
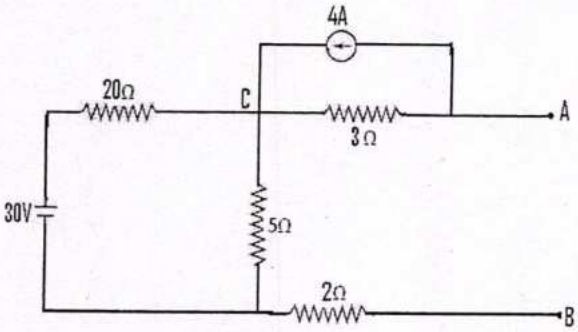
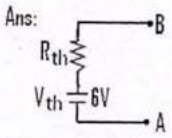


Ans: I_{BD} = 11.46mA

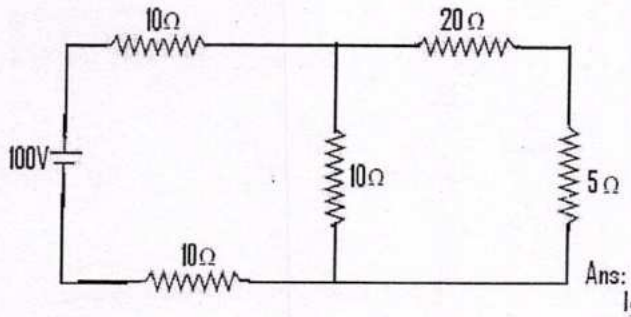
Q10. Using Thevenin's theorem calculate the equivalent circuit across AB shown in fig: [CO 4] [L 4]



Ans:



Q11. Calculate the value of current through the 5 ohm resistor using Nortons theorem in the circuit shown in fig state whether super position can be applied for the circuit with reason. [CO 4] [L 4]



Ans: $I_{5\Omega}$ = 1.05A

Q12. Calculate the Norton's equivalent circuit as seen by R_L in the circuit in fig: [CO 4] [L 4]

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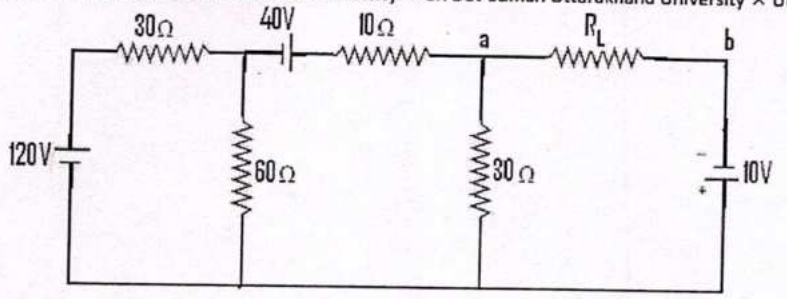
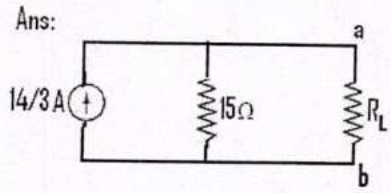
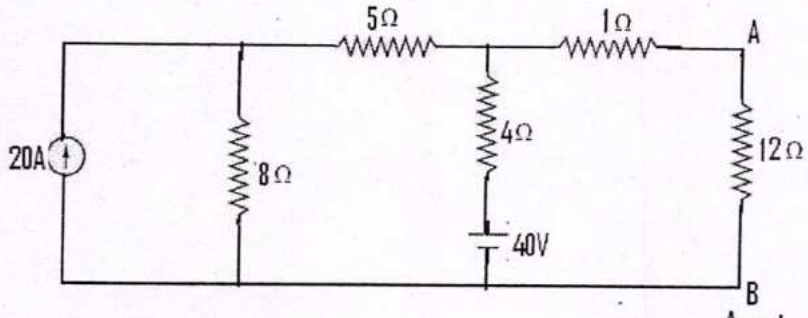


Ans:

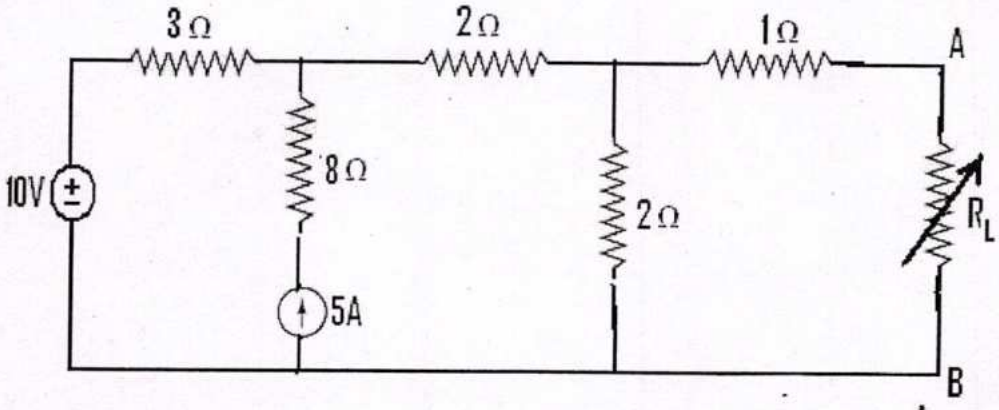


Q13. Calculate the current flowing through the 12 ohm resistor in the circuit of fig: using Norton's Theorem[CO 4] [L 4]



Ans: $I_{12\Omega} = 4.53A$

Q14. Illustrate maximum power transfer theorem. Using this theorem, calculate the value of the load resistance R_L for maximum power flow through in fig [CO 4] [L 4]



Ans:
$R_L = 17/7\ \Omega$

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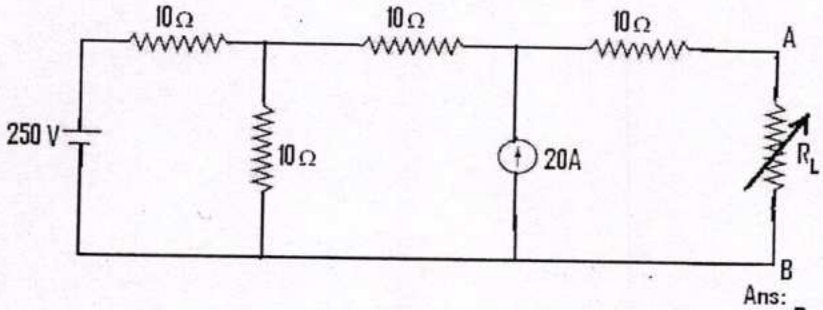
Q15. In the network in fig:, calculate [CO 4] [L 4]

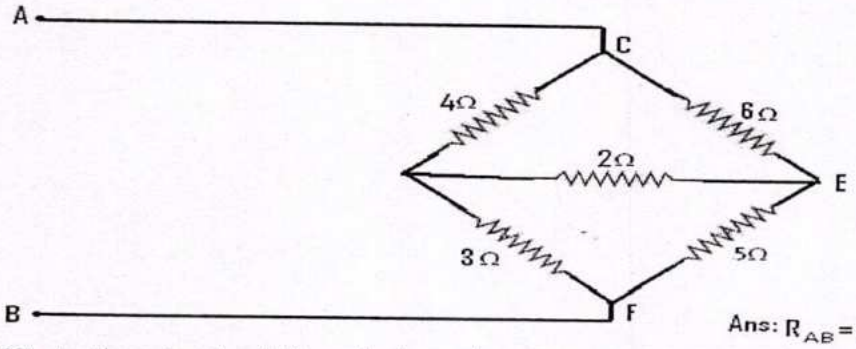
(i) The value of R_L, for maximum power dissipation

(ii) The value of maximum power



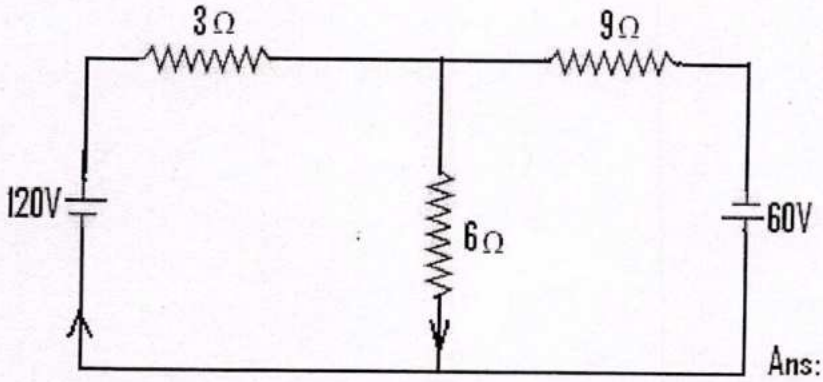
Ans: P_{max} = 1806.25W

Q16.Calculate the resistance between AB of the circuit. [CO 4] [L 4]



Ans: R_{AB} = 6.28Ω

Q17. In the circuit of fig calculate the current the 6 ohm resistor using Super Position Theorem. [CO 4] [L 4]



Ans: $I_{6\Omega}$ = 9.09A

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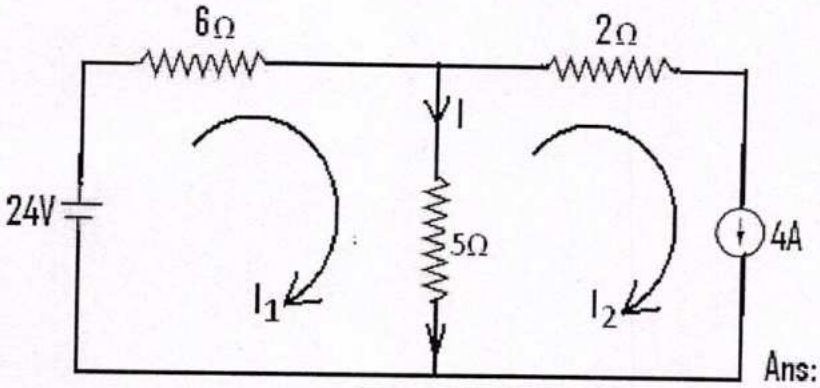
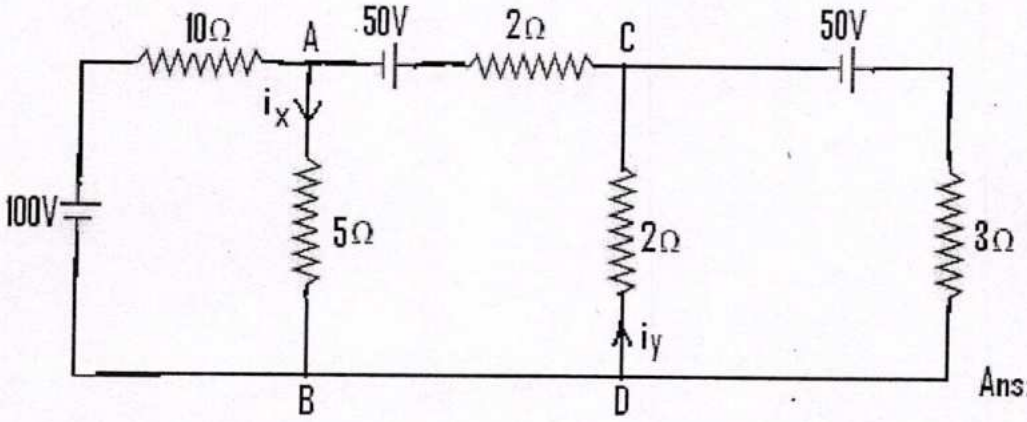
Q18. Determine the current I in the circuit of fig: using Mesh Analysis: [CO1,CO 4] [L 4]



Ans: I = 0 A

Q19. Determine the current i_x&i_y in the network of fig: State Theorem used. [CO1,CO 4] [L 4]



Ans: i_x = 3.88A
i_y = 0.15A

Q20. In the circuit shown in fig calculate the current through 6 ohm resistor by using Nodal Analysis. [CO 4] [L 4]

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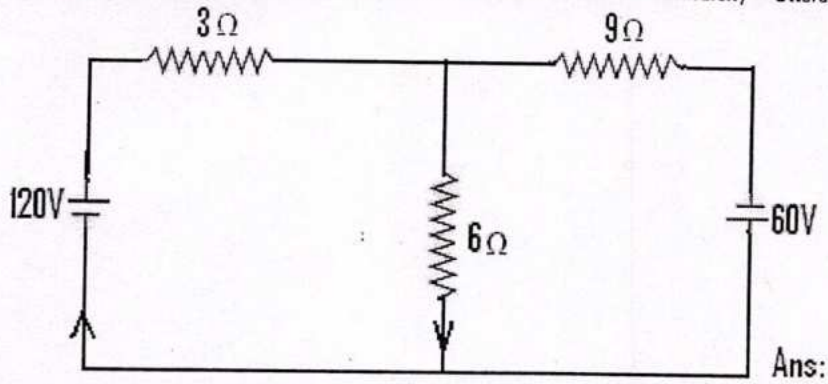

Ans: $I_{6\Omega} = 9.09A$

Short Answer questions

Q21. Illustrate ohms law and state if there are any conditions. [CO1] [L 2]
Q22. Illustrate the concept of source conversion. [CO1] [L 2]
Q23. Illustrate why is silver is more conducting than copper? [CO1] [L 2]
Q24. Classify the different types of super conducting materials. [CO1] [L 2]
Q25. Differentiate the ideal and practical voltage and current sources[CO1] [L2]
Q26. Compare and elaborate KVL and KCL in electrical circuits[CO1] [L2]

Q27. Derive the Star to delta and delta to star conversion. [CO4] [L 3]
Q28. State and prove Superpostion theorem. [CO1] [L 2]
Q29. State and prove Thevenins theorem. [CO1] [L 2]
Q30. State and prove Nortons theorem[CO1] [L 2]
Q31. State and prove maximum power transfer theorem. [CO1] [L 2]
Q32. Electrical appliances are connected in parallel because it[CO 1] [L 2]

a) is a simple circuit
b) draws less current
c)results in reduced power loss
d) makes the operation of appliance

Q33. The purpose of load in an electric circuit is to[CO 1] [L 2]
a) increase the circuit current
b) utilise electrical energy
c) decrease the circuit current
d) none of the above

Q34. The electric current is due to the flow of[CO 1] [L 2]
a)positive charges only
b)negative charges only
c)both positive and negative charges
d)neutral particles only

Q35 .The resistor values in delta network that is equivalent to a wye containing three 120Ω resistor is[CO 1] [L 4]

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a)360Ω each
b) 240Ω each
c)180Ω each
d)120Ω each

Q36. Voltage across an inductance L is given by. [CO 1] [L 2]
a) V/I
b) 1/2 LI^2
c) V/L
d) LdI/dt

Q37.Maximum power is transferred when the source resistance is. [CO 1] [L 2]
a) equal to load resistance
b) zero
c) maximum resistance
d) double the load

Q38.Superposition theorem is based on the concept of[CO 1] [L 2]
a) duality
b) reciprocity
c) linearity
d) non-linearity

Q39 Resistivity of a wire depends on[CO 1] [L 2]

A.material
B.length
C.crosssectionarea
D. all of above

Q. 40 When n numbers resistances of each value r are connected in parallel, then the resultant resistance is x. When these n resistances are connected in series, total resistance is[CO 1] [L 4]

A.nx.
B.n^2x.
C.x/n.
D. rnx.

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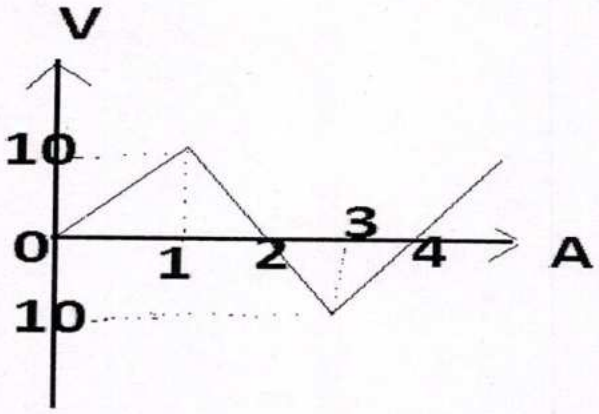
Module- 2 (AC circuit analysis)

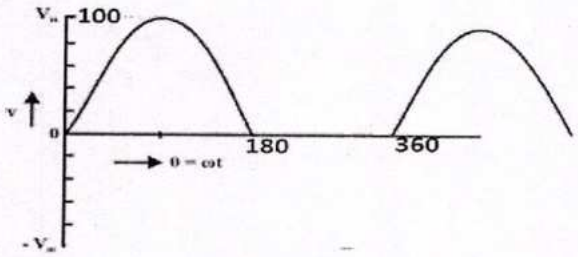
Long answer questions

Q 1 Calculate average, RMS, Form factor and Peak factor of given waveform:[CO 4] [L 4]



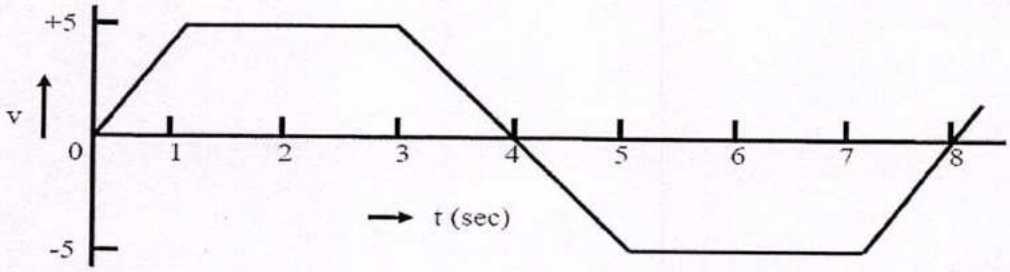
[Ans:-5,5.7735,1.154,1.73]

Q 2 Calculate average, RMS, Form factor and Peak factor of given waveform: [CO 4] [L 4]



[Ans:- 31.83,50, 1.57,2]

Q 3. Calculate average, RMS, Form factor and Peak factor of given waveform: [CO 4] [L 4]



[Ans:- 3.75,4.08,1.088,1.22]

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Q 4. An R-L-C series ckt consist of a resistance of 1000 ohm , an inductance of 100 mH and a capacitance of 10 Micro farad. Calculate - [CO 4] [L 4]

(a) Resonance frequency
(b) Q-factor
(c) Half power frequency.

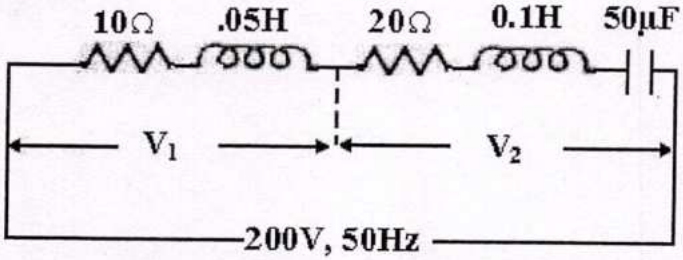
[Ans:- 159.2 Hz,0.1,1607.31Hz]

Q5. A coil having a resistance of 6 ohm and an Inductance of 0.0255 H is connected across a 230 V,50Hz AC supply. Calculate:- [CO 4] [L 4]

(a) Current
(b) Power factor
(c) Active power
(d) Reactive power

[Ans:- 23<-36.87,0.8 lagging ,4232W,3174VAR]

Q 6. Draw a vector diagram for the circuit shown indicating the terminal voltage V_1 and V_2 and the current. Calculate the values of (a) the current (b) V_1 and V_2 (c) the power factor. [CO 4] [L 4]



[Ans. (a) 5.84A; (b) 108.2V, 221.5V; (c) 0.875 leading]

Q 7. An inductive coil is connected to a supply of 250 Volt at 50 Hz and takes a current of 5Amp. The coil dissipates 750W. Calculate the resistance and inductance of the coil and power factor of the coil. [CO 4] [L 4]
[Ans. 30 Ohm,0.127 H,0.6 leading]

Q 8 A 120 V , 100W lamp is to be connected to a 220 V, 50HZ a.c. supply. Estimate the value of pure inductance should be connected in series in order that lamp is run on rated voltage. [CO 4] [L 4]

[Ans. (i) 99W, .92 leading (ii) 195 Ω]

Q 9 A resistor and a capacitor are connected in series across a 150V ac supply. When the frequency is 40Hz, the circuit draws 5A. When the frequency is increased to 50Hz, it draws

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6A. Find the values of resistance and capacitance. Also calculate the power drawn in the second case. [CO 4] [L 4]

[Ans. 11.662 Ω, 144μF, 420W]

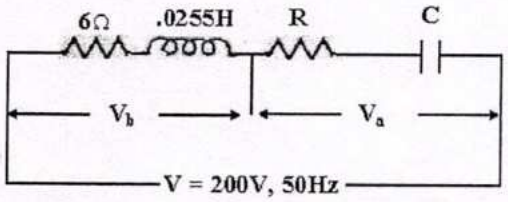
Q 10 Two impedance Z_1 and Z_2 when connected separately across a 230-V, 50Hz supply consumed 100W and 60W at power factors of 0.5 lagging and 0.6 leading respectively. If these impedances are now connected in series across the same supply, calculate- total power absorbed and overall p.f. (ii) the value of the impedance to be added in series so as to raise the overall p.f. to unity. [CO 4] [L 4]

[Ans. (i) 99W, .92 leading (ii) 195 Ω]

Q 11 A resistor of 12 Ω and an inductance of 0.025H are connected in series across a 50Hz supply. What values of resistance and inductance when connected in parallel will have the same resultant impedance and p.f. Calculate the current in each case when the supply voltage is 230V. [CO 4] [L 4]

[Ans. 17.14 Ω , 83.2mH, $16.04\angle -33.2°$ A]

Q 12 Calculate the value of R and C so that $V_b = 3V_a$ and V_b and V_a are in quadrature. Find also the phase relation between V and V_b; V_a and I. [CO 4] [L 4]



Ans. R = 2.66 Ω ; C = 1590μF

Va lags behind the current by 37°

Vb leads the current by 53°

Vb leads V by 18.3°

Q 13 A 480V source energizes two loads in parallel supplying 2KVA at a 0.5 lagging power factor to one load and 4 KVA at a 0.6 leading power factor to the other load. Calculate the source current and also the total impedance of the combination. [CO 4] [L 4]

Ans. I = 7.72$\angle 23.5°$ **A , Z = 62.17**$\angle -23.5°\,\Omega$

Q 15 Two impedances Z_1 = (8+j6) and Z_2 = (3-j4) Ω are in parallel. If the total current of this combination is 25A, Calculate the power taken by each Impedance and voltage across them. [CO 4] [L 4]

Ans. P_{Z_1} **= 1KW** , P_{Z_2} **= 1.5KW, 111.8**$\angle -26.57°$ V

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Q 16 Derive is resonance in RLC parallel circuit[CO 1] [L 3]

Q 17 Derive an expression for the instantaneous current drawn by a pure inductive circuit on application of a sinusoidal voltage and show that current lags behind voltage by a quarter cycle. [CO1] [L3]

Q 18 Illustrate the selectivity of RLC resonance circuit. Prove that it reciprocal of quality of the circuit. [CO 1] [L 3]

Q 19 Show that the average power demand, in a purely inductive and purely capacitive A.C. circuit is Zero. [CO4] [L 3]

Q 20 Illustrate the concept of band width and quality factor in series R-L-C circuit. Derive an expression.What are active and reactive powers? Why is the term 'reactive power' not encountered when d-c source are used in an electric circuit? [CO4] [L 3]

Short Answers

Q 21. Illustrate the harmonic waves of a non sinusoidal wave. [CO 1] [L 2]
Q 22. Illustrate the power factor of ac circuit. [CO 1] [L 2]
Q 23. Illustrate the phase sequence of a three phase circuit. [CO 1] [L 2]
Q 24. Derive the relationship between phase and line terms in a star connected three phase system [CO 1] [L 3]
Q 25. Derive the relationship between phase and line terms in a delta connected three phase system [CO 4] [L 3]
Q 26. Illustrate the two wattmeter method for power measurement. [CO 4] [L 2]
Q 27. Derive the relation of power factor in a two wattmeter method. [CO1] [L 3]

Q 28. Compare series RLC and parallel RLC resonance. [CO1] [L 3]

Q 29. Differentiate types of power in electrical systems [CO1] [L 3]

Q 30. Illustrate why the sinusoidal waveforms are used to represent the Ac quantities. [CO1] [L 3]
Q 31. Under the condition of resonance, RLC series circuit [CO 1] [L 2]
a) purely resistive ckt
b) purely inductive ckt
c) capacitive ckt
d) inductive ckt

Q 32 The average value of 2A dc current is [CO 1] [L 2]
a) 1A
b) 2A
c) 4A
d) 3A

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Q33 The r.m.s. value of sinusoidally varying current is _____ that of its average value. [CO 1] [L 2]

a) more than
b) less than
c) same as
d) none of these

Q34 .Power absorbed in a pure inductive circuit is zero because [CO 1] [L 2]

a)reactive component of current is zero
b)active component of current is maximum
c)power factor of the circuit is zero
d) reactive & active component of current cancel out

Q 35. .In a balanced 3-ϕ delta connected system the relationship between the rms values of line current & the phase current is given by [CO 1] [L 2]

a) Line current = phase current
b) Line current =√3 phase current
c) phase current = √3 line current
d) line current = √2 phase current

Q 36. Average power dissipated across the resistor is zero(T/F). [CO 1] [L 2]

Q 37. Quality factor of RLC circuit defines the voltage magnification produced during the resonance condition (T/F) [CO 1] [L 2]

Q 38. Average value of Dc quantity is always unity(T/F) [CO 1] [L 2]

Q 39. Power factor for the inductive circuit id always zero(T/F) [CO 1] [L 2]

Q 40. For inductive circuit the voltage is always lags behind the current by the quarter of an angle(T/F) [CO 1] [L 2]

Module- 3
(Magnetic circuit & single phase transformer)

Long answer questions

Q1. Differentiate between different types of magnetic materials on the basis of permeability. [CO3] [L 3]

Q2. Compare the similarities and dissimilarities between electric and magnetic circuits. Explain the B-H curve and hysteresis & eddy current losses. [CO3] [L 3]

Q3. Illustrate the formation of hysteresis loop and briefly give the significance. [CO3] [L 3]

a)-Retentivity

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b)-Coercivity

Q4. An iron ring has a cross sectional area of 400 sqr mm and the mean diameter of 25 cm. it is wound with 500 turns. If the value of relative permeability is 250, find the total magnetic flux set up in the ring. The coil resistance is 474 ohm and supply voltage is 240V. [CO5] [L 4]

Q5. A core forms a closed magnetic loop of path length 32 cm. Half of this path has a cross sectional area of 2 sqr cm and relative permeability 800. The other half has cross sectional area of 4 sqr cm and relative permeability 400. find the current needed to produce a magnetic flux of 0.4 WB in the core if it is wound with 1000 turns of insulated wire. Ignore lekage and fringing effect. [CO5] [L 4]

Q6. Derive the emf equation of transformer and explain the voltage transformation ratio[CO3] [L 3]

Q7. Difference between ideal and practical transformer. And draw the phasor diagram of practical transformer on load? Draw the equivalent and approximate equivalent ckt of transformer. [CO3] [L 3]

Q8. Illustrate the concept of referring of impedances in a transformer and give its importance. Define the following terms [CO 3] [L 3]

a)- Impedance ratio
b)- voltage regulation

Q9. Draw and elaborate the following tests performed on the transformer with connection diagram-[CO 3] [L 3]

a)- Open circuit test
b)- Short circuit test

Q10. Illustrate the following terms w.r.t transformer. [CO 3] [L 3]

a)- All day efficiency
b)- Losses in a transformer.

Derive the relation for efficiency of transformer and hence give the condition for maximum efficiency?

Q11. A single phase 2200/250V, 50 Hz transformer has a net core area of 36 sqr cm and max flux density of 6 Wb/ sqr m. Calculate the number of turns of primary and secondary.[CO5] [L4]

Q12. A transformer takes a current of 0.6 A and absorbs 64 W when primary is connected to its normal supply of 200 V, 50 Hz, the secondary being open circuited . Calculate the magnetizing and iron loss component. [CO5] [L4]

Q13. A 100 KVA , 2200/400 V transformer has R_1=0.3 ohm. X_1=1.1 ohm

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, R_2 = 0.01 ohm and X_2 =0.035 ohm .Calculate the equivalent impedance of the transformer referred to primary and the copper loss. [CO5] [L4]

Q14. A 10 KVA , 200/400 V, 50 Hz single phase transformer gave the following test results:-
O.C test- 200V , 1.3 A , 120 W
S.C test – 22 V , 30 A, 200 W
Evaluate the transformer circuit parameters. [CO5] [L5]

Q16. Enlist the characteristics of practical transformer. Draw the phasor diagram of practical transformer on no load and explain it. [CO3] [L 3]

Q17. A 50 kVA, 11kv/220v single phase transformer gave the following test result:-
OC test- 220v, 1.5A, 20 watts
SC test- 150v. 25A, 95 watts
Evaluate all the circuit parameter.[CO5] [L5]

Q18. A 50 kVA, single phase transformer has 95 % full load efficiency at this iron loss is equal to the copper loss. The loading is done as follows-
No load for 10 hours, one fourth full load for 7 hours, half load for 5 hours, full load for 2 hours. Estimate all day efficiency of the transformer. [CO5] [L5]

Q 19. Differentiate the constructional features and connection configuration of the three phase transformers. Also write a short notes on Auto transformer [CO3] [L 3]

Q 20. A single-phase transformer has 1000 turns on its primary and 400 turns on secondary side. An ac voltage of 1250 V. 50Hz is applied to its primary side with secondary open circuited. Find [CO5] [L5]
(a) : The emf on the secondary side.
(b):The peak value of flux density, take effective area of core as 60 cm².[CO 3] [L 5]

Short Answer qustions

Q 21. Illustrate voltage regulation in three phase transformer. [CO3] [L2]
Q 22. Compare core and shell type transformers.[CO3] [L2]
Q 23. Write the characteristics of ideal and practical transformers [CO3] [L2]
Q 24. Derive the condition for maximum efficiency in a single phase transformer. [CO3] [L2]
Q 25. Discuss the OC and SC test on the single phase transformer.[CO3] [L2]
Q 26. Differentiate the types of losses occurred in the single phase transformer. [CO 3] [L3]
Q 27. Distinguish between power and distribution transformers.[CO 3] [L3]

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Q 28. Illustrate transformation and turns ration. [CO 3] [L3]

Q 29. Compare electric and magnetic circuits.[CO 3] [L3]

Q 30. How can we calculate the efficiency of a transformer by knowing its losses. [CO 3] [L3]

Q 31.The requirement for inducing emf in a coil is that [CO3] [L2]

a) Flux should link the coil
b) there should be change in flux linking the coil
c) coil should form a closed loop
d) none of these

Q 32.The property of a magnetic circuit which opposes the formation of the flux is known as[CO3] [L2]

a) reactance
b) mmf
c) permeance
d) reluctance

Q 33 The primary & secondary winding of a transformer are _____ coupled.[CO3] [L2]

a) electrically
b) magnetically
c) electrically & magnetically
d) none of these

Q34. .A transformer transforms: [CO3] [L2]

a) current
b) voltage
c) voltage & current
d) frequency

Q35. Short ckt test is performed on a transformer to determine its [CO3] [L2]

a) S.C. current
b) S.C. voltage
c) full load winding loss
d) core loss

Q 36 The conductance & susceptance component of admittance are [CO3] [L2]

a) series element
b) parallel element
c) series-parallel element
d) none of these

Q1 Illustrate the following terms [CO3] [L2]

a)- magneto motive force
b)-reluctance
c)-leakage flux
d)-fringing

Q 37. Ideal transformer has the efficiency of 100 Percent. (T/F) [CO 3] [L 2]

Q 38. On no load condition the iron losses of the transformer is zero. (T/F)[CO 3] [L 2]

Q 39. Illustrate the all day efficiency of the transformer.[CO 3] [L 3]

Q 40. Volatge regulation of the transformer should be high.(T/F)[CO 3] [L 2]

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Module- 4 (DC and AC Machines)

Long Answer questions

Q. 1 A 8 pole lap wound DC generator has 70 slots in its armature with 22 conductors per slot. The ratio of pole are to pole pitch is 0.64. The diameter of the bore of the pole shoe is 0.48m. The length of the pole shoe is 0.28m. The air gap flux density is 0.32Wb/m^2 & the generated emf in the armature is 400V. Calculate the speed of generator. [CO5] [L4]

Ans. 1442

Q. 2. A 6-pole DC shunt generator has the following data Field resistance=120Ω, armature resistance = 0.8Ω Number of conductors = 350 (Wave connected) Flux per pole= 0.02Wb Load resistance across the terminals = 12Ω, armature rotates at 1000 rpm. Calculate power absorbed by load. [CO5] [L4]

Ans. 8859.6W

Q. 3 A 220V DC series motor has an armature resistance of 0.3Ω and field resistance of 0.2Ω. It runs at a speed of 700 rpm taking a current of 15A. Calculate the resistance to be inserted in series with the armature to reduce the speed to 600rpm. The input current remains constant. Assume that the magnetization characteristics is st. line. [CO5] [L4]

Ans. 2.02Ω

Q. 4. A 250V, DC shunt motor on no-load, runs at a speed of 1000 rpm and takes a current of 5A the armature and shunt field resistances are 0.2Ω and 250Ω respectively. Calculate the speed when the motor is on-load, and is taking current of 50A. Assume that the armature reaction weakens the field by 3%. [CO5] [L4]

Ans. 993.7rpm

Q. 5. Determine developed torque and shaft torque of 220V, 4-pole series motor with 800 conductors wave connected & supplying a load of 8.2KW by taking 45A from the mains. The flux per pole is 25mWb and its armature circuit resistance is 0.6Ω. [CO5] [L4]

Ans. 286.2N-m 270.5N-m

Q. 6 A 140 v DC shunt motor has an armature resistance of .2 ohm &field resistance 70 ohm . The full load current is 40A & full load speed is 1800rpm . If brush drop is 3 v, find speed of motor at half load. [CO5] [L4]

Ans 1855.61rpm

Q. 7 A lap-connected 8-pole generator has 500 armature conductors and useful flux of 0.07Wb. Determine the induced emf when it runs at 1000rpm. What must be the speed at which it is to be driven to produce the same emf if it is wave wound? [CO5] [L4]

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Ans. 583.3V, 250rpm

Q.8. Determine the power output of a dc motor armature having 1152 lap-connected conductors carrying 150A and rotating at 300rpm in a 12-pole. The flux/pole is 60mWb. [CO5] [L4] Ans. 51.84KW

Q. 9. A dc shunt generator has an armature resistance of 0.25 Ω and the resistance of shunt field is 220 Ω. While delivering a load current of 50A, it has terminal voltage of 440V. Determine the generated emf. [CO5] [L4]

Ans. 453V

Q. 10. A shunt Generator has an induced voltage on open circuit of 127V. When the machine is loaded, terminal voltage is 120V. Find the load current if the field resistance is 15 Ω and armature resistance is 0.02 Ω. Ignore armature reaction. [CO5] [L4]

Ans. 342A

Q. 11. A d.c. shunt generator is supplying load connected bus bar voltage of 220V. It has an armature resistance of 0.025 Ω and field resistance of 110 Ω. Calculate the value of load current and load power when it generates an emf of 230V. [CO5] [L4]

Ans. 398A, 87.56KW

Q. 12. A 230V d.c. shunt Motor takes 51A at full load. Resistance of armature and field windings are 0.1 Ω and 230 Ω. Determine (i) field current (ii) armature current (iii) back emf developed at full load [CO5] [L4]

Ans. (i) 1A (ii) 50A (iii) 225V

Q. 13. A 250V d.c. shunt Machine has line current of 80A. It has armature & field resistance of 0.1 Ω and 125 Ω respectively. Calculate Power developed in armature when running as (a) Generator (b) Motor. [CO5] [L4]

Ans. (a) 21.172KW (b) 1889KW

Q. 14. A 230V dc shunt Motor runs at 800rpm and takes armature current of 50A. Find the resistance to be added to the field circuit to increase speed to 1000 rpm at an armature current of 80A. Assume armature resistance 0.15 Ω and field winding resistance = 250 Ω [CO5] [L4]

Ans. 68.95 Ω

Q. 15. A 200V dc shunt Motor has Ra=0.2 Ω and R_{sh}=200. If the no load and full load current drawn by the motor are 5A and 40A respectively. Calculate the full load speed, assuming that no load speed is 1000 rpm. [CO5] [L4]

Ans. 964.85rpm

Q. 16. A 10KW , 200V, 1200 rpm series DC Generator has armature resistance of 0.1 Ω, field winding resistance of 0.3 Ω. The frictional & winding loss of the machine is 200W and

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brush contact drop is 1V per brush. Find the efficiency of the machine and the load current, at which this machine has maximum efficiency. [CO5] [L4]

Ans. 88.49%, 50A

Q. 17. A 3-phase, 400V, induction motor is wound for 4 poles and is supplied from 50Hz supply system. Calculate (i) synchronous speed (ii) the speed of the motor when slip is 4%. [CO4] [L 5]

Ans. (i) 1500 rpm, (ii) 1440 rpm

18. A 6 pole 3-phase alternator is coupled to an engine running at 1000rpm. It is supplied by 3-phase induction motor having full load speed 1480 rpm. Find the no. of poles of motor, %slip, frequency of rotor current. [CO5] [L4]

Ans. 4, 1.3%, 0.65Hz

Q. 19. 3-phase, 6 pole, 50Hz star connected induction motor delivers useful power 25kW white running at a speed of 950rpm. It is connected to a supply of 400V takes current of 60A. Its stator resistance per phase is 0.14Ω. Mechanical losses are 900W Calculate (i) shaft torque (ii) gross torque (iii) rotor copper loss (iv) stator copper loss. [CO5] [L4]

Ans. (i) 251.4N-m (ii) 260.47N-m (iii) 1363.1W (iv) 1512W

Q. 20. Rotor of a 4 pole 3-phase induction motor operates from a supply whose frequency is 50Hz. Calculate (i) Speed at which magnetic field is rotating w.r.t. stator, (ii) Speed of rotor when the slip is 0.04, (iii) Frequency of rotor currents at stand still. [CO5] [L4]

Ans. (i) 1500rpm (ii) 1440rpm (iii) 50Hz

Short answer Questions

Q 21. Illustrate the construction of DC machines. [CO3] [L 2]

Q 22. Derive the equation of EMF equation and torque equation in case of DC generator and motor [CO3] [L 3]

Q 23. Differentiate between the no load and full load characteristics of Dc generator. [CO3] [L 3]

Q 24. Illustrate the construction of three phase induction motor. [CO3] [L 2]

Q 25. Illustrate the production of rotating magnetic field in case of three phase induction motor [CO3] [L 2]

Q 26. Enlist the torque slip characteristics of three phase induction motor. [CO3] [L 2]

Q 27. Illustrate the concept of slip in three phase induction motor. [CO3] [L 2]

Q 28. Illustrate why single phase induction motor is nor self-starting? Compare its starting methods. [CO3] [L 2]

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Q 29. Illustrate the synchronous motor is not self-stating? Compare its starting methods. [CO3] [L 2]

Q 30. Illustrate the constructional features of synchronous machines. [CO3] [L 2]

Q31. The requirement for inducing emf in a coil is that [CO3] [L 2]

a) Flux should link the coil
b) there should be change in flux linking the coil
c) coil should form a closed loop
d) none of these

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a) reactance
b) mmf
c) permeance
d) reluctance

Q 33 The primary & secondary winding of a transformer are _____ coupled. [CO3] [L 2]

a) electrically
b) magnetically
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d) none of these

Q 34 .A transformer transforms: [CO3] [L 2]

a) current
b) voltage
c) voltage & current
d) frequency

Q 35 .Short ckt test is performed on a transformer to determine its [CO3] [L 2]

a) S.C. current
b) S.C. voltage
c) full load winding loss
d) core loss

Q36 .The conductance & susceptance component of admittance are [CO3] [L 2]

a) series element
b) parallel element
c) series-parallel element
d) none of these

Q37.Current in a DC motor depends mainly upon: [CO3] [L 2]

a) motor rating
b) armature resistance
c) field resistance
d) load

Q38 The number of parallel paths in a simplex lap winding is equal to [CO3] [L 2]

a) 2
b) number of pair of poles
c) number of poles in the machine
d) none of these

Q 39 Torque developed in a DC machine is proportional to [CO3] [L 2]

a) ϕ.Ia
b) Ia.N

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c) Z.N d) ϕ.N

Q 40 .Which motor has majority use in industry. [CO3] [L 2]
a) 3-ϕ synchronous motor b) 3-ϕ squirrel cage induction motor
c) 3-ϕ slip ring induction motor d) dc compound motor

Module- 5(Electrical Installations)

Long answer questions

Q.1 Illustrate the working principles of fuses as a protective circuit element. Also explain its types[CO2] [L 2]

Q 2. With a proper schematic diagram, illustrate the constructional features of miniature circuit breakers[CO2] [L 2]
Q3. Illustrate the constructional features of ELCB along with its applications. [CO2] [L 2]
Q 4. Illustrate the different types of wires use in the electrical systems. [CO2] [L 2]
Q5. Compare the different types of cables used in the electrical systems. [CO2] [L 3]
Q 6. Illustrate the purpose of earthing. Explain the different types of earthing. [CO2] [L 2]
Q7. Classify the different types of the batteries along with their constructional features. [CO2] [L 3]
Q 8. Illustrate the constructional feature and working principle of Lead acid batteries. Also discuss its operational characteristics[CO2] [L 2]
Q 9. An electric iron is rated 250 V, 500 W. What current will it take when connected to 250 V supply. If the iron is used for one hour daily for 30 days, what will be the monthly electricity bill at rs 5 per unit? [CO2] [L 3]
Q 10 An electric kettle has to raise the temp of 2kg of water from 30 deg to 100 deg in 7 minutes. The kettle is having an efficiency of 80 percent and is supplied from a 230 V supply. What should be the resistance of heating element? [CO2] [L 3]

Q 11. Calculate the current flowing through a 60 W lamp on a 230 V supply when just switched on at an temperature of 25 deg. The operating temp of the filament material is 2000deg. And its temp coefficient is 0.005 per degree C at 0 deg [CO2] [L 3]
Q 12 A residential flat has the following average electrical consumption per day:

i) 4 tube lights of 40 w each for 10 hr per day
ii) 2 filament lamps of 40 W each for 12 hrs per day

Calculate the cost of energy per month if 1 KWh of energy costs Rs 4.5. [CO2] [L 3]
Q 13. Illustrate the power factor also explain its significance. [CO2] [L 2]

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Q 14. Classify the methodologies to improve the power factor[CO2] [L 2]

Q 15 Compare the types of electric wires on the basis of the temperature range of the wires.[CO2] [L 2]

Short Answer Types

Q 16 One kilowatt hour is same as [CO2] [L 2]
A.$36X10^5$ watt
B.$36X10^5$ ergs
C.$36X10^5$ joules
D. $36 X 10^5$ BTU
Q 17 Rating of fuse wire is expressed in [CO2] [L 2]
A.Watts
B.Mho
C.Ω
D. Ampere.

Q 18 Primary battery is such a battery [CO2] [L 2]

A. Which can be charged

B. Which cannot be reconditioned by replacing chemical

C. Which can not be reused

D. Which can not be recharged

Q 19. The first electro - chemical cell was invented by [CO2] [L 2]

A. Luigiri Galvani

B, Alessandro Volta

C. Denial

D. Leclanche

Q 20 Cells are connected in parallel in order to [CO2] [L 2]

(A) increase the voltage available. (B) reduce cost of wiring.

(C) increase the current available.

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(D) reduce the time required to fully charge them after use.

Q 21 Static Capacitors are used for_____. [CO2] [L 2]

(A) Power improvement. (B) Current improvement.

(C) Voltage improvement. (D) Power factor improvement.

Q 22. In India, electrical power is transmitted by [CO2] [L 2]

(A) 1 – phase a.c. system. (B) 3-wire d.c. system.

(C) 3-phase 3-wire a.c. system. (D) 2-wire d.c. system.

Q 23. A battery is a source of [CO5] [L 2]

(A) DC voltage. (B) 1 ϕ AC voltage.

(C) 3 ϕ AC voltage. (D) AC or DC voltage.

Q 24. 53) During charging, the electrolyte of a lead acid cell becomes [CO2] [L 2]

(A) Stronger. (B) Weaker.

(C) Water. (D) Diluted.

Q 25. Capacitor that can have the highest capacitance value is [CO2] [L 2]

(A) Mica (B) Paper

(C) Electrolytic (D) Ceramic

Q 26. Illustrate the various types of subsystems of electric power system[CO2] [L2]
Q 27. Compare AC and DC transmission systems. [CO2] [L2]
Q 28. Compare overhead and underground distribution systems. [CO2] [L2]
Q 29. Illustrate the advantages of earthing. [CO2] [L2]
Q 30. Illustrate the function of neutral and earth wire in electrical system. [CO2] [L2]
Q 31. illustrate the advantages of protective devices used in power system. [CO2] [L2]
Q 32. illustrate the applications of MCB. [CO2] [L2]
Q 33. Illustrate the applications of ELCB. [CO2] [L2]
Q 34. Illustrate the applications of Cartridge type fuse. [CO2] [L2]
Q 35. Illustrate the tariff in the electrical system. [CO2] [L2]
Q 36. Fuse wire is made up of copper materials(T/F) [CO2] [L2]

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Q 37. SI unit of electrical energy is KWH(T/F) [CO2] [L2]

Q 38. Differentiate between Batten and Conduit wiring. [CO2] [L2]

Q 39. illustrate the advantages of plate earthing. [CO2] [L2]

Q 40. Differentiate between the types of electrical distribution systems. [CO2] [L2]

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Previous University Question Paper

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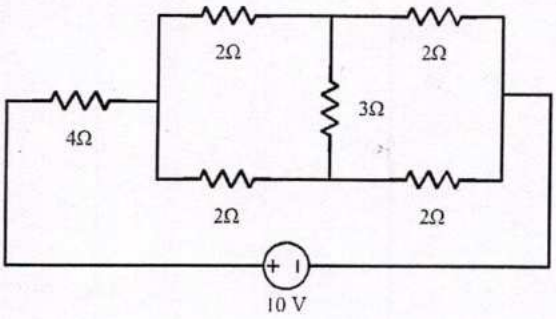
Sub Code: EET-001 ROLL NO.....

FIRST SEMESTER EXAMINATION, 2022 – 23
Ist Year, B.Tech. – Common to All Branch
BASIC ELECTRICAL ENGINEERING

Duration: 3:00 hrs **Max Marks: 100**

Note: - Attempt all questions. All Questions carry equal marks. In case of any ambiguity or missing data, the same may be assumed and state the assumption made in the answer.

Q 1.	Answer any four parts of the following. a) A 200 Ω resistance is connected across a 10 V supply. Calculate (i) the current through the resistor, and (ii) the power loss. b) The current changes at 0.5 A/s in 1 H inductor. Determine (i) voltage across it and (ii) energy stored in the inductor after 2 s. c) A capacitor of 10 μF is connected across 200 V dc voltage. Calculate the energy stored in it. If the same capacitor stores one mJ of energy, obtain the amount of charge stored. d) Enumerate the types of batteries. e) Considering a sine voltage wave, what is the difference between peak voltage, RMS voltage, and average voltage? f) With the help of neat circuits, find the series and parallel resonance conditions for the RLC circuit.	5x4=20
Q 2.	Answer any four parts of the following. a) Draw and differentiate between salient pole and cylindrical pole synchronous machine rotors. b) With the help of various examples, differentiate wires and cables used in electrical applications. c) Derive the equivalent resistance equations during star-delta and delta-star conversions. d) In Figure 1, find the power loss in the 4 Ω resistor  Figure 1 e) In a balanced three-phase load, what will be the reading of wattmeter-1 (P_1) and wattmeter-2 (P_2) for the following cases? (Given that the line voltage and line current is equal to 1 unit) **Case 1:** unity power factor **Case 2:** zero power factor f) Describe active, reactive, and apparent powers. Also, derive the power factor equation using the power triangle method.	5x4=20

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a) A magnetic circuit with a single air gap is shown in Figure 2. The core dimensions are as follows. Core cross-sectional area (A_c) = 1.8×10^{-3} m^2, mean core length (l_c) = 0.6 m, gap length (g) = 2.3×10^{-3} m, N = 83 turns. Assume that the core is of infinite permeability and neglect the effects of the fringing field at the air gap and leakage flux. Calculate (i) the reluctance of the core and (ii) the reluctance of the air gap. For a current of I = 1.5 A, calculate (iii) the total flux, (iv) the flux linkages of the coil, and (v) the coil inductance.

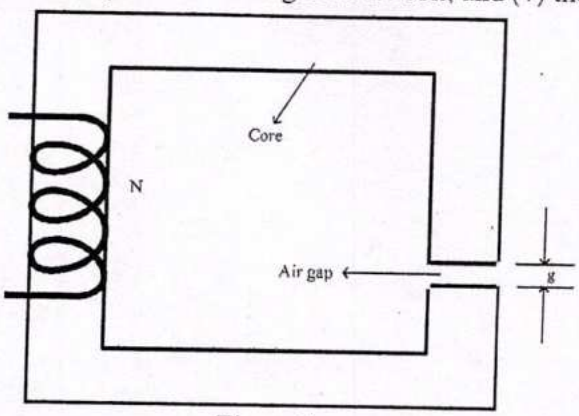

Figure 2

b) In Figure 3, (i) find the load current through a 2 Ω resistor utilizing Norton's theorem. (ii) prove that the current through a 2 Ω resistor is equal when utilizing Thevenin's theorem.

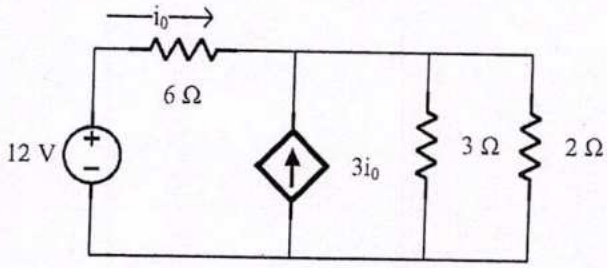

Figure 3

c) Explain the following in brief.

(i) B-H characteristic

(ii) PMMC

4. Answer any two parts of the following. 10x2= 20

a) With the help of proper examples, describe the major difference between static and rotating machines. With the help of a neat sketch, explain the construction and working principle of a DC Machine.

b) A DC generator has an armature emf of 100 V when the useful flux per pole if 20 mWb and the speed is 800 rpm. Calculate the generated emf (i) with the same flux and a speed of 1000 rpm, (ii) with a flux per pole of 24 mWb, and a speed of 900 rpm.

c) The following data are obtained on a 200 kVA, 50 Hz 2000/200 V distribution transformer.

Transformer test	Voltage (V)	Current (A)	Power (W)
Open circuit test with HV open-circuited	200	4	120
Short circuit test with LV short-circuited	60	10	300

Draw the approximate equivalent circuit of the transformer referred to the HV and LV sides, respectively.

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a) With the help of a neat sketch and equivalent circuits, explain the construction and working principle of a three-phase Induction Machine. Also, explain the two types of Induction Machine rotors. With a help of torque-slip characteristics of a three-phase induction motor, explain the three modes of operation. b) With the help of a neat sketch and diagram, explain the following briefly. (i) Switchgear (ii) MCB (iii) ELCB (iv) Generation, Transmission, and Distribution in Power Systems c) Obtain the energy consumption for the following data. One bulb (100 W running for 2 hr), One fan (75 W running for 4 hr), and One fridge (50 W running for 6 hr). If the running time of the above three appliances is reduced to by half, what will be the energy saving? Also, find the money saved, if the unit price is Rs. 5.	

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ASSIGNMENT/TUTORIAL PLAN

Course Name: Basic Electrical Engineering **Course Code: EET-001**

Assignment Plan			Assignment Delivered	
S.No.	Planned Date	Assignment No.	Actual Date	Assignment Type
1	3/3/23	A1	6/3/23	Semi-Numerical
2	23/3/23	A2	25/3/23	Semi-Numerial
3	6/4/23	A3	8/4/23	Semi-Numerial
4	20/4/23	A4	20/4/23	Semi-Numerial
5	10/5/23	A5	12/5/23	Semi-Numerial
Total Assignments: 5		Planned:5	Delivered: 5	

(Signature of Faculty Member)

(Signature of HOD with date & seal)

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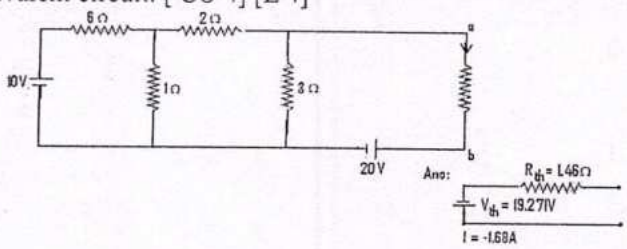
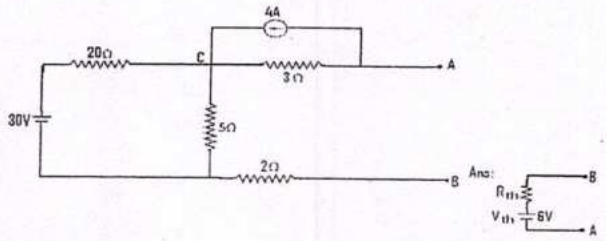
Assignment No 1

Given Date: 6/3/23

Submission Date: 10/3/23

Question No.	Questions
1.	Illustrate the following terminologies with examples [CO1] [L 2] i) Active & Passive circuit element ii) Linear & Nonlinear circuit elements iii) Unilateral & Bilateral circuit elements
2.	State and prove maximum power transfer theorem for DC circuits. [CO1] [L 2]
3.	Derive the relation of Star to Delta and Delta to Star conversion for estimating equivalent resistance of the circuit. [CO4] [L 3] Replace the network of the circuit in fig. to the left of the terminals a-b by its Thevenin's equivalent circuit. [CO 4] [L 4] 
4.	Calculate Norton equivalent circuit across AB shown in fig: [CO4] [L4] 
5.	In the circuit of fig: find the current the 6 ohm resistor using Super Position Theorem. [CO4] [L4]

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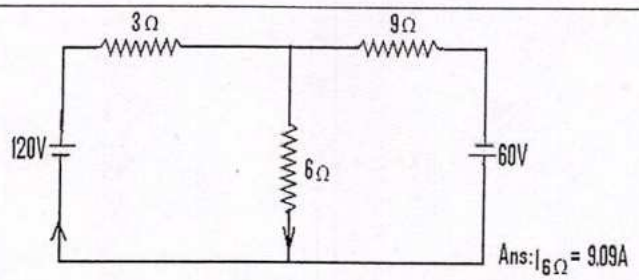
6.



State and prove Thevenin's and Norton's circuit for the DC circuits [CO4] [L2]

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Assignment No 1

Q1. (i) Active & Passive circuit element:

Passive Circuit Elements:

Passive elements do not require an external power source to operate. They can neither generate nor amplify electrical signals. Examples include resistors, capacitors, inductors, and transformers.

Active Circuit Elements:

Active elements require an external power source to function and have the ability to amplify or generate electrical signals. Examples include transistors, operational amplifiers (op-amps), and integrated circuits (ICs).

(ii) Linear & Nonlinear circuit elements

Linear Circuit Elements:

Linear elements follow the principle of superposition, meaning that their output is directly proportional to their input. When you plot the input-output relationship on a graph, it forms a straight line, hence the term "linear."

Linear elements obey Ohm's Law and exhibit a constant resistance, capacitance, or inductance.

Examples include resistors, capacitors (under certain conditions), and inductors (under certain conditions).

Nonlinear Circuit Elements:

Nonlinear elements do not follow the principle of superposition, meaning that their output is not directly proportional to their input. When you plot the input-output relationship on a graph, it does not form a straight line.

Nonlinear elements may exhibit varying resistance, capacitance, or inductance depending on the input signal.

Examples include diodes, transistors, and certain types of semiconductor devices.

(iii) Unilateral & Bilateral circuit elements;

Unilateral Circuit Elements:

Unilateral elements exhibit different characteristics depending on the direction of the signal flow. In other words, their behavior is asymmetric with respect to signal direction.

These elements respond differently to signals passing through them in one direction compared to signals passing through them in the opposite direction.

Examples include diodes and rectifiers.

Bilateral Circuit Elements:

Bilateral elements exhibit the same characteristics regardless of the direction of the signal flow. In other words, their behavior is symmetric with respect to signal direction.

These elements respond similarly to signals passing through them regardless of the direction of the signal flow.

Examples include resistors, capacitors, and inductors.

Q2. **The Maximum Power Transfer Theorem** states that the maximum power is transferred from a source (such as a voltage source) to a load (such as a resistor) when the load resistance is equal to the internal resistance of the source. This theorem applies to both DC (direct current) and AC (alternating current) circuits.

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Q3. Delta To Star Conversion

$$R_A = \frac{R_3.R_1}{R_1 + R_2 + R_3}.....$$

$$R_B = \frac{R_1.R_2}{R_1 + R_2 + R_3}.....$$

$$R_C = \frac{R_2.R_3}{R_1 + R_2 + R_3}.....$$

Star To Delta Conversion

$$R_3 = \frac{R_A R_B + R_B R_C + R_C R_A}{R_A}$$

$$R_1 = \frac{R_A R_B + R_B R_C + R_C R_A}{R_B}$$

$$R_2 = \frac{R_A R_B + R_B R_C + R_C R_A}{R_C}$$

Q5. **Super Position Theorem:**

In a linear electrical circuit with multiple independent sources (voltage and/or current), the voltage or current at any point in the circuit is the algebraic sum of the individual effects of each source acting alone while all other sources are turned off.

Q6 **State and prove Thevenin's and Norton's circuit for the DC circuits:**

In a DC circuit, any two-terminal network can be replaced by a single voltage source V_{th} in series with a single resistor R_{th}, where V_{th} is the open-circuit voltage at the terminals, and R_{th} is the resistance measured across the terminals with all the sources turned off (replaced by their internal resistances).

In a DC circuit, any two-terminal network can be replaced by a single current source I_N in parallel with a single resistor R_N, where I_N is the short-circuit current at the terminals, and R_N is the resistance measured across the terminals with all the sources turned off (replaced by their internal resistances).

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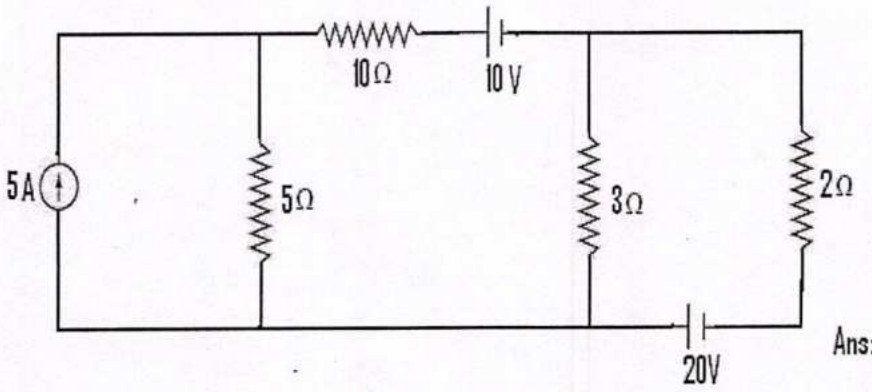
Class Test-1

Q1. Determine the current and voltage across the 2ohm resistance in fig. [CO 4, CO1] [L 3]



Ans: $I_{2\Omega} = 5A$, $V_{2\Omega} = 10V$

Q2. Compare and elaborate KVL and KCL in electrical circuits [CO1] [L2]

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Assignment No 2

Given Date: 25/3/23 Submission Date: 31/3/23

Question No.	Questions
1.	A 120 V , 100W lamp is to be connected to a 220 V, 50HZ a.c. supply. Estimate the value of pure inductance should be connected in series in order that lamp is run on rated voltage. [CO 4] [L 4]
2.	A resistor and a capacitor are connected in series across a 150V ac supply. When the frequency is 40Hz, the circuit draws 5A. When the frequency is increased to 50Hz, it draws 6A. Find the values of resistance and capacitance. Also calculate the power drawn in the second case. [CO 4] [L 4]
3.	Derive is resonance in RLC parallel circuit[CO 1] [L 3]
4.	Derive an expression for the instantaneous current drawn by a pure inductive circuit on application of a sinusoidal voltage and show that current lags behind voltage by a quarter cycle. [CO1] [L3]
5.	Illustrate the selectivity of RLC resonance circuit. Prove that it reciprocal of quality of the circuit. [CO 1] [L 3]
6	A resistor of 12 Ω and an inductance of 0.025H are connected in series across a 50Hz supply. What values of resistance and inductance when connected in parallel will have the same resultant impedance and p.f. Calculate the current in each case when the supply voltage is 230V. [CO 4] [L 4]

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Assignment No. 2

Q1.

Lamp power $\Rightarrow P = 100\,W$
voltage $V = 120\,V$
AC Supply $V = 220\,V$ $\quad f = 50\,Hz$

$$Z_{lamp} = \frac{V^2}{P} = \frac{120^2}{100} = 144\,\Omega$$

$$Z_{total} = \sqrt{R^2 + X_L^2}$$

$$R_L = \frac{V^2}{P} = \frac{120^2}{100} = 144\,\Omega$$

$$X_L = \sqrt{Z_{Total}^2 - R^2}$$

$$= \sqrt{144^2 - 144^2} = 0$$

$$X_L = 0\,\Omega$$

$$\therefore \boxed{L = 0 \text{ Henry}}$$

Q2.

$$Z = \sqrt{R^2 + \left(\frac{1}{\omega C}\right)^2}$$

$$P = V \times I \cos\phi$$

$Z_1 = 30\,\Omega$
$Z_2 = 25\,\Omega$

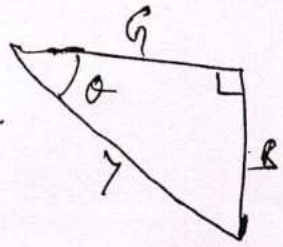
$$P = 150 \times 6 = 900\,W$$

$$\therefore R = 2163\,\Omega \qquad C = 2.26 \times 10^{-5}\,F$$

Q3 Resonance in RLC parallel circuit-

$$\frac{1}{Z} = \frac{1}{R} + \frac{1}{X_L} + \frac{1}{X_C}$$

$$Y = \frac{1}{Z} \qquad Y = \sqrt{\left(\frac{1}{R}\right)^2 + \left(\frac{1}{X_L} - X_C\right)^2}$$



$$\phi = \cos^{-1}\left(\frac{G}{Y}\right)$$

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Assignment No 2

Q4. Instantaneous power in the inductive circuit is given by

$p = vi$

$P = (V_m \sin\omega t)(I_m \sin(\omega t + \pi/2)$

$P = V_m I_m \sin\omega t \cos\omega t$

$P = \frac{V_m I_m}{2} 2 \sin\omega t \cos\omega t$

$P = \frac{V_m}{\sqrt{2}} \frac{I_m}{\sqrt{2}} \sin 2\omega t$ or

$P = 0$

Hence, the average power consumed in a purely inductive circuit is zero.

Q5. Illustrate the selectivity of RLC resonance circuit. Prove that it reciprocal of quality of the circuit.

The selectivity of an RLC circuit is the ability of the circuit to respond to a certain frequency and discriminate against all other frequencies. If the band of frequencies to be selected or rejected is narrow, the quality factor of the resonant circuit must be high. high-Q means equal to or greater than 10.

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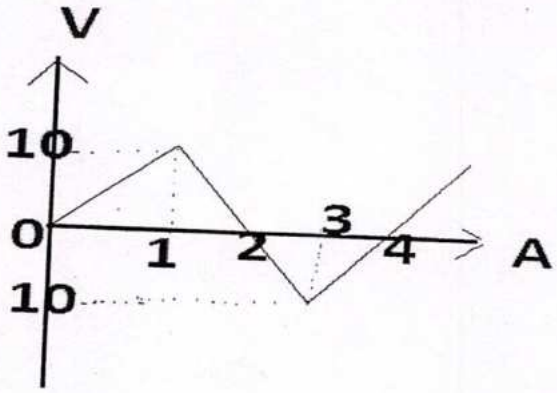
Class Test-2

Q 1 Calculate average, RMS, Form factor and Peak factor of given waveform: [CO 4] [L 4]



[Ans:-5, 5.7735, 1.154, 1.73]

Q2. Derive the relation of power factor in a two wattmeter method. [CO1] [L 3]

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Assignment No 3

Given Date: 8/4/23 Submission Date: 12/4/23

Question No.	Questions
1.	Illustrate the different types of wires use in the electrical systems. [CO2] [L 2]
2.	An electric kettle has to raise the temp of 2kg of water from 30 deg to 100 deg in 7 minutes. The kettle is having an efficiency of 80 percent and is supplied from a 230 V supply. What should be the resistance of heating element?
3.	Illustrate the working principles of fuses as a protective circuit element. Also explain its types[CO2] [L 2]
4	An electric iron is rated 250 V, 500 W. What current will it take when connected to 250 V supply. If the iron is used for one hour daily for 30 days, what will be the monthly electricity bill at rs 5 per unit? [CO2] [L 3]

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Assignment No 3

Q1. In electrical systems, various types of wires are used for different purposes, depending on factors such as conductivity, insulation, and environmental conditions. Here are some common types of wires used in electrical systems:

1. Copper Wire:
Copper wire is the most commonly used conductor in electrical wiring due to its excellent conductivity and corrosion resistance. It comes in various sizes and types, including solid and stranded. Solid copper wire is used in applications where flexibility is not a concern, while stranded copper wire is more flexible and suitable for applications where the wire needs to bend or twist.

2. Aluminum Wire:
Aluminum wire is an alternative to copper wire and is often used in large-scale electrical distribution systems due to its lower cost and lighter weight. However, aluminum wire has higher resistance compared to copper, so it may require larger sizes for the same current-carrying capacity.

3. Tinned Copper Wire:
Tinned copper wire is copper wire that has been coated with a thin layer of tin to improve its resistance to corrosion. It is commonly used in marine and automotive applications where exposure to moisture and salt can cause corrosion.

4. Alloy Wire:
Alloy wires are made from a combination of different metals to achieve specific properties such as increased strength, resistance to high temperatures, or improved conductivity. Examples include nichrome wire (nickel-chromium alloy) used in heating elements and constantan wire (copper-nickel alloy) used in temperature sensors.

5. Insulated Wire:
Insulated wires have a layer of insulation surrounding the conductor to protect against electrical shock and prevent short circuits. The insulation material can vary depending on the application, with common materials including PVC (polyvinyl chloride), XLPE (cross-linked polyethylene), and rubber.

6. Twisted Pair Wire:
Twisted pair wires consist of two insulated copper wires twisted together to reduce electromagnetic interference (EMI) and crosstalk. They are commonly used in telecommunications and networking applications, such as Ethernet cables.

7. Coaxial Cable:
Coaxial cables consist of a central conductor surrounded by a dielectric insulator, a metallic shield, and an outer insulating layer. They are used for transmitting high-frequency signals with minimal interference and are commonly used in cable television, satellite communication, and computer networking.

8. Fiber Optic Cable:

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Fiber optic cables transmit data using light pulses through a core made of glass or plastic fibers. They offer high bandwidth and are immune to electromagnetic interference, making them ideal for long-distance communication and high-speed internet connections.

Q2. Fuses work as a protective circuit element:

1. Fusible Element:
The key component of a fuse is the fusible element, typically made of a material with a low melting point, such as copper, silver, or an alloy. The size and material of the fusible element are selected based on the rated current and voltage of the circuit.

2. Overcurrent Protection:
When the current flowing through the circuit exceeds the rated current of the fuse, the fusible element heats up due to the Joule heating effect. This heating causes the temperature of the fusible element to rise.

3. Melting of Fusible Element:
As the current continues to exceed the rated value, the temperature of the fusible element reaches its melting point. At this point, the fusible element melts and breaks the circuit, interrupting the flow of current.

4. Circuit Interruption:
Once the fusible element melts, the circuit is opened, and current flow ceases. This prevents further flow of excessive current and protects the connected devices and wiring from damage.

5. Protection Coordination:
Fuses are designed to provide selective coordination with other protective devices in the circuit. This ensures that the fuse nearest to the fault interrupts the circuit first, minimizing downtime and enhancing system reliability.

Q3. **Energy consumed per day =Power×time**

=500 Wh=0.5kWh

Energy consumed for 30 days=$0.5\times2\times30$**=30kWh**

Cost=30*5

=Rs. 150

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Class Test-3

Q1. A 10 KVA , 200/400 V, 50 Hz single phase transformer gave the following test results:-

O.C test- 200V , 1.3 A , 120 W

S.C test – 22 V , 30 A, 200 W

Evaluate the transformer circuit parameters. [CO5] [L5]

Q2. Compare the similarities and dissimilarities between electric and magnetic circuits. Explain the B-H curve and hysteresis & eddy current losses. [CO3] [L 3]

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Assignment 4

Given Date: 20/4/23 Submission Date: 25/4/23

Question No.	Questions
1.	Derive the emf equation of transformer and explain the voltage transformation ratio[CO3] [L 3]
2.	Draw and elaborate the following tests performed on the transformer with connection diagram-[CO 3] [L 3] a)- Open circuit test b)- Short circuit test
3.	An iron ring has a cross sectional area of 400 sqr mm and the mean diameter of 25 cm. it is wound with 500 turns. If the value of relative permeability is 250, find the total magnetic flux set up in the ring. The coil resistance is 474 ohm and supply voltage is 240V. [CO5] [L 4]
4.	Illustrate the following terms w.r.t transformer. [CO 3] [L 3] a)- All day efficiency b)- Losses in a transformer. Derive the relation for efficiency of transformer and hence give the condition for maximum efficiency?
5.	A single phase 2200/250V, 50 Hz transformer has a net core area of 36 sqr cm and max flux density of 6 Wb/ sqr m. Calculate the number of turns of primary and secondary.[CO5] [L4]
6.	A transformer takes a current of 0.6 A and absorbs 64 W when primary is connected to its normal supply of 200 V, 50 Hz, the secondary being open circuited . Calculate the magnetizing and iron loss component. [CO5] [L4]

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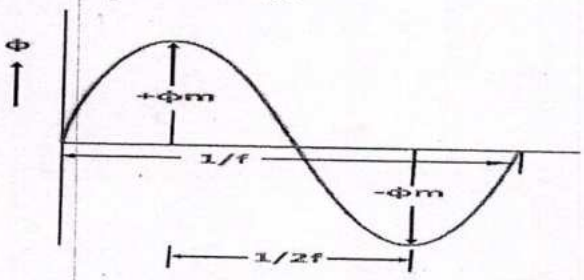
Assignment 4

Q1. Derive the emf equation of transformer and explain the voltage transformation ratio.

The derivation of the **EMF Equation** of the transformer is shown below. Let

- ϕ_m be the maximum value of flux in Weber
- f be the supply frequency in Hz
- N_1 is the number of turns in the primary winding
- N_2 is the number of turns in the secondary winding

Φ is the flux per turn in Weber



As shown in the above figure that the flux changes from + ϕ_m to − ϕ_m in half a cycle of 1/2f seconds.

By Faraday's Law

Let E_1 be the emf induced in the primary winding

$$E_1 = -\frac{d\psi}{dt} \ldots\ldots\ldots (1)$$

Where $\Psi = N_1\phi$

$$\text{Therefore, } E_1 = -N_1 \frac{d\varphi}{dt} \ldots\ldots\ldots (2)$$

Since ϕ is due to AC supply $\phi = \phi_m \text{Sinwt}$

$$E_1 = -N_1 \frac{d}{dt}(\varphi_m \text{Sinwt})$$

$$E_1 = -N_1 w\varphi_m \text{Coswt}$$

$$E_1 = N_1 w\varphi_m \text{Sin}(wt - \pi/2) \ldots\ldots\ldots (3)$$

So the induced emf lags flux by 90 degrees.

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Maximum valve of emf

$$E_1 max = N_1 w \varphi_m \ldots\ldots\ldots (4)$$

But $w = 2\pi f$

$$E_1 max = 2\pi f N_1 \varphi_m \ldots\ldots\ldots (5)$$

Root mean square RMS value is

$$E_1 = \frac{E_{1max}}{\sqrt{2}} \ldots\ldots\ldots (6)$$

Putting the value of $E_1 max$ in equation (6) we get

$$E_1 = \sqrt{2}\pi f N_1 \varphi_m \ldots\ldots (7)$$

Putting the value of $\pi = 3.14$ in the equation (7) we will get the value of E_1 as

$$E_1 = 4.44 f N_1 \varphi_m \ldots\ldots\ldots (8)$$

Similarly

$$E_2 = \sqrt{2}\pi f N_2 \varphi_m$$

Or

$$E_2 = 4.44 f N_2 \varphi_m \ldots\ldots\ldots (9)$$

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Now, equating the equation (8) and (9) we get

$$\frac{E_2}{E_1} = \frac{4.44fN_2\varphi_m}{4.44fN_1\varphi_m}$$

Or

$$\frac{E_2}{E_1} = \frac{N_2}{N_1} = K$$

The above equation is called the **turn ratio** where K is known as the transformation ratio.

The equation (8) and (9) can also be written as shown below using the relation

($\phi m = B_m \times A_i$) where A_i is the iron area and B_m is the maximum value of flux density.

$$E_1 = 4.44N_1fB_mA_i \text{ Volts} \quad \text{and} \quad E_2 = 4.44N_2fB_mA_i \text{ Volts}$$

$$\frac{\text{R.M.S value}}{\text{Average value}} = \text{Form factor} = 1.11$$

For a sinusoidal wave

Q2. Transformer open circuit and short circuit tests are conducted to determine the parameters and performance characteristics of a transformer. These tests are essential for evaluating transformer efficiency, losses, and voltage regulation.

Open Circuit Test:

In the open circuit test, the secondary winding of the transformer is left open, and rated voltage is applied to the primary winding. The primary current drawn during this test is very small, as the only current flowing is the magnetizing current required to establish the magnetic flux in the core.

Purpose:

- Determine the no-load current and losses in the transformer.
- Calculate the core losses, including eddy current losses and hysteresis losses.

Procedure:

1. Connect the primary winding of the transformer to a variable AC voltage source.

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2. Measure the primary voltage (V_1), primary current (I_0), and power input (P_0) to the transformer.
3. Calculate the power absorbed by the transformer ($P_{abs}=V_1 \times I_0$).
4. The core losses can be calculated as the difference between the power input and the power absorbed ($P_{core}=P_0-P_{abs}$).

Short Circuit Test:

In the short circuit test, the secondary winding is short-circuited, and rated voltage (or lower) is applied to the primary winding. This test is conducted at reduced voltage to limit the current flowing through the windings, as a full-rated voltage would cause excessive current and potential damage to the transformer.

Purpose:

- Determine the equivalent impedance and losses of the transformer.
- Calculate the copper losses in the windings.

Procedure:

1. Short-circuit the secondary winding of the transformer.
2. Connect the primary winding to a variable AC voltage source with reduced voltage.
3. Measure the primary voltage (V_{sc}), primary current (I_{sc}), and power input (P_{sc}) to the transformer.
4. Calculate the equivalent impedance of the transformer ($Z_{eq}=I_{sc}V_{sc}$).
5. The copper losses can be calculated as the product of the primary current and the resistance of the winding ($P_{cu}=I_{sc2} \times R_{eq}$), where R_{eq} is the equivalent resistance of the transformer.

Q3.

Magnetic field (B) within the ring: $B \approx 2.004 \times 10^{-2}$ T

Total magnetic flux (Φ) passing through the ring $\Phi \approx 8.016 \times 10^{-6}$ Wb

Q4. a) All-Day Efficiency:

The all-day efficiency of a transformer represents its efficiency over a 24-hour period, considering both loaded and unloaded conditions. It is given by the ratio of the output power to the input power over a 24-hour period. Mathematically, it can be expressed as:

All-
Day Efficiency=Output Power for 24 hoursInput Power for 24 hours×100%All-
Day Efficiency=Input Power for 24 hoursOutput Power for 24 hours×100%

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b) Losses in a Transformer:

The losses in a transformer can be categorized into two main types: copper losses (also known as winding losses) and iron losses.

1. **Copper Losses (Winding Losses):** Copper losses occur due to the resistance of the transformer windings. When current flows through the windings, it encounters resistance, resulting in power loss in the form of heat. Copper losses are proportional to the square of the current and can be calculated using the formula:

$P_{cu}=I_2R$

where:

- P_{cu} is the copper loss
- I is the current flowing through the windings
- R is the resistance of the windings

2. **Iron Losses:** Iron losses occur due to two main factors: hysteresis loss and eddy current loss.

- Hysteresis Loss: This loss occurs because the magnetic domains in the transformer core constantly change direction as the magnetic field alternates. Energy is required to overcome the magnetic hysteresis, resulting in hysteresis loss.
- Eddy Current Loss: Eddy currents are induced in the transformer core due to the changing magnetic field. These currents circulate within the core material and cause energy loss in the form of heat.

The total iron losses are often referred to as the "core loss" and can be measured by conducting an open circuit test on the transformer.

Q5. $V=4.44\times f\times N\times B\times A$

- V is the voltage induced in the winding (in volts)
- f is the frequency of the AC supply (in Hz)
- N is the number of turns in the winding
- B is the maximum flux density in the core (in Weber per square meter, or Wb/m^2)
- A is the cross-sectional area of the core (in square meters)

Given:

- Input voltage (V_1) = 2200 V
- Output voltage (V_2) = 250 V
- Frequency (f) = 50 Hz

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- Maximum flux density (B) = 6 Wb/m²
- Core area (A) = 36 cm² = 36×10^{-4} m²

For Primary Winding:

Using the formula for induced voltage, we can write:

$V_1=4.44\times50\times N_1\times6\times36\times10^{-4}$

$N_1\approx256800$

For Secondary Winding:

N2=29100

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Class Test-4

Q1. Derive the equation of EMF equation and torque equation in case of DC generator and motor [CO3] [L 3]

Q2. An 8 pole lap wound DC generator has 70 slots in its armature with 22 conductors per slot. The ratio of pole are to pole pitch is 0.64. The diameter of the bore of the pole shoe is 0.48m. The length of the pole shoe is 0.28m. The air gap flux density is $0.32 Wb/m^2$ & the generated emf in the armature is 400V. Calculate the speed of generator. [CO5] [L4]

Ans. 1442

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Assignment No 5

Given Date: 12/5/23 Submission Date: 16/5/23

Question No.	Questions
1.	Illustrate the construction of DC machines. [CO3] [L 2]
2.	Enlist the torque slip characteristics of three phase induction motor. [CO3] [L 2]
3.	A 6-pole DC shunt generator has the following data Field resistance=120 Ω, armature resistance = 0.8 Ω Number of conductors = 350 (Wave connected) Flux per pole= 0.02Wb Load resistance across the terminals = 12 Ω, armature rotates at 1000 rpm. Calculate power absorbed by load. [CO5] [L4]
4	A 3-phase, 400V, induction motor is wound for 4 poles and is supplied from 50Hz supply system. Calculate (i) synchronous speed (ii) the speed of the motor when slip is 4%. [CO4] [L 5]

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Assignment No 5

Q1. DC Generator Construction:

Frame:

The frame provides mechanical support to all components of the machine. It is usually made of cast iron or steel and provides a rigid structure to hold the rotating and stationary parts.

Field Magnets:

DC generators have field magnets that create a magnetic field within the machine. These magnets are either permanent magnets or electromagnets. The magnetic field produced by the field magnets is responsible for inducing an electromotive force (EMF) in the armature.

Armature:

The armature is the rotating part of the DC machine. It consists of a core made of soft iron laminations to reduce eddy current losses. The armature winding, usually made of copper conductors, is wound around the armature core. The armature winding is connected to the external circuit through commutator segments.

Commutator:

The commutator is a cylindrical structure made of copper segments insulated from each other. It is mounted on the armature shaft and rotates with it. The function of the commutator is to convert the alternating EMF induced in the armature winding into direct current (DC) by changing the direction of the current flow at every half rotation.

Brushes:

Carbon brushes are used to make electrical contact with the commutator segments. They are mounted on stationary parts of the machine and provide electrical connection between the armature winding and the external circuit. The brushes are held against the commutator under spring pressure to ensure good electrical contact.

Terminals:

The terminals are provided on the machine for external connections. The output terminals of the DC generator are used to connect the generated DC voltage to the load.

DC Motor Construction:

The construction of a DC motor is similar to that of a DC generator, with some differences:

Frame: Provides mechanical support to all components of the motor.

Field Magnets: Create a magnetic field within the motor. In a DC motor, the field magnets can be either permanent magnets or electromagnets.

Armature: The armature is the rotating part of the motor. It consists of a core made of soft iron laminations and armature winding wound around it. The armature winding is connected to the external circuit through commutator segments.

Commutator: Similar to the commutator in a generator, the commutator in a motor is used to convert DC current flowing through the armature winding into mechanical rotation.

Brushes: Carbon brushes provide electrical contact between the commutator segments and the stationary parts of the motor.

Terminals: The terminals are used to supply power to the motor and are connected to the armature winding and field winding.

Q2. Torque Slip Characteristics of Three Phase Induction Motor

The torque slip curve for an induction motor gives us the information about the variation of torque with the slip. The slip is defined as the ratio of difference of synchronous speed and actual rotor

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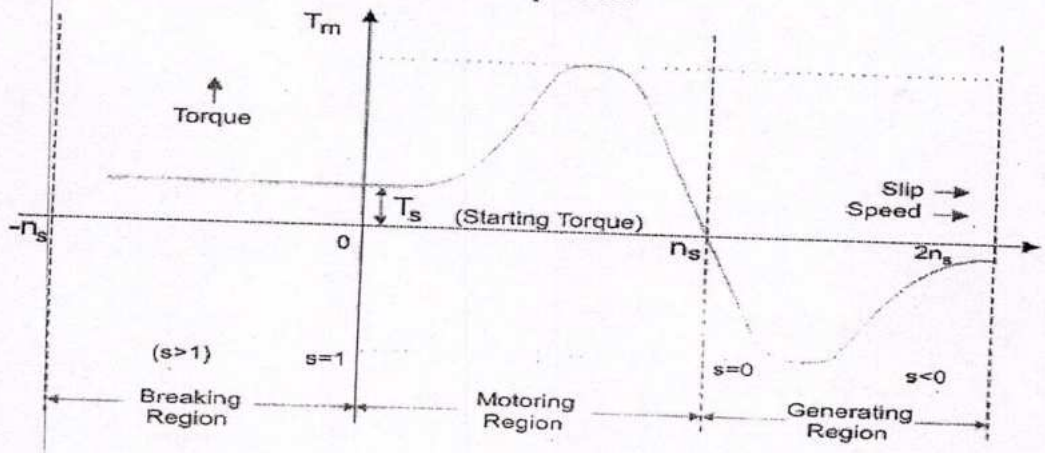
speed to the synchronous speed of the machine. The variation of slip can be obtained with the variation of speed that is when speed varies the slip will also vary and the torque corresponding to that speed will also vary.

The curve can be described in three modes of operation-



Torque Slip Curve for Three Phase Induction Motor

The torque-slip characteristic curve can be divided roughly into three regions:

- Low slip region
- Medium slip region
- High slip region

Q3. Generated EMF of a DC generator can be calculated using the formula:

$E_g = P \times Z \times N$

The armature current (I_a) can be calculated using Ohm's law:

loadIa=$E_g/(R_a+R_{load})$

terminal voltage (V_t) can be calculated using Ohm's law:

$V_t = E_g - I_a \times R_a$

load (loadP_{load}) can be calculated using Ohm's law:

$P_{load} = V_t^2/R_{load}$

Q4. (i) Synchronous Speed (N_{sync}):

sync=120×504=1500 rpmN_{sync}=4120×50=1500rpm

(ii) Speed of the Motor (N_{motor}) at 4% Slip:

Given that the slip is 4%, we need to convert it to a fraction:

=0.04s=1004=0.04

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Now, we can use the formula for the speed of the motor:

$N_{motor}=(1-0.04)\times 1500$

$N_{motor}=0.96\times 1500$

$N_{motor}=1440$ rpm

Therefore: (i) The synchronous speed of the motor is 1500 rpm1500rpm. (ii) The speed of the motor when the slip is 4% is 1440 rpm1440rpm.

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Class Test-5

Q1. Illustrate the purpose of earthing. Explain the different types of earthing. [CO2] [L 2]

Q2. A residential flat has the following average electrical consumption per day:

i) 4 tube lights of 40 w each for 10 hr per day

ii) 2 filament lamps of 40 W each for 12 hrs per day

Calculate the cost of energy per month if 1 KWh of energy costs Rs 4.5. [CO2] [L 3]

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CIE - I Even Sem (22-23) (Solution)

1.

a) Illustrate the concept of source conversion.

⇒ Converting a voltage into a current source makes the circuit simpler and the circuit solution are simplified especially with the mixed sources.

b) Electrical appliances are connected in parallel because it b) draws less current.

c) Illustrate ohms law and state if there are any conditions.

⇒ Ohm's law states that the voltage across a conductor is directly proportional to the current flowing through it provided all the physical conditions and temperatures remain constant.

d) Power absorbed in pure inductive circuit is zero because c) Power factor of the circuit is zero.

e) The RMS value of sinusoidal varying current is 0.45 time that of its average value.

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f) Different types of power in electrical system.

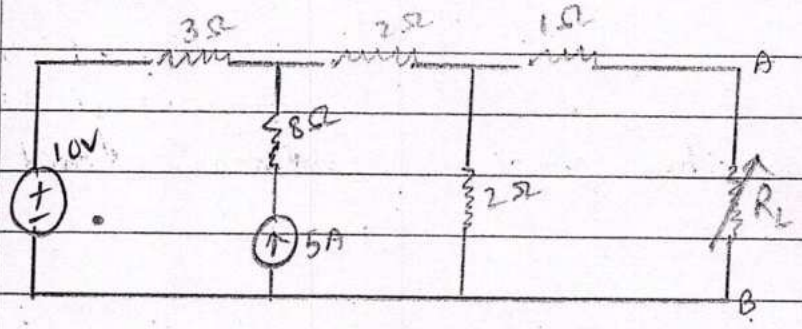
⇒ a) Apparent power – $P = VI$

b) True power – $VI\cos\theta$

c) Reactive power – $VI\sin\theta$

2.

a) State and prove maximum power transfer theorem. Using this theorem, find the value of the load resistance RL for maximum power flow through fig.



⇒ Maximum power transfer theorem :–

In DC circuit, maximum power is transferred from a source to load when the load resistance is made equal to internal resistance of the

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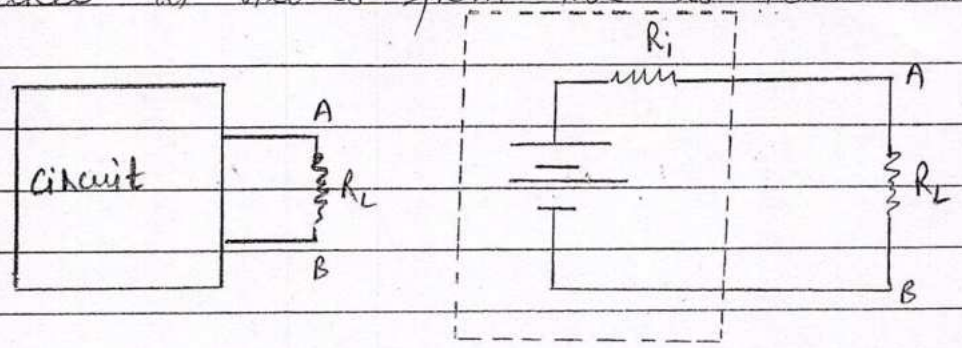
source as viewed from the load terminals.



Proof -

consider a voltage source V of internal resistance R_i delivering power to a load R_L

AC to circuit

$$I = \frac{V}{R_i + R_L}$$

Power delivered to load

$$P = I^2 R_L$$

$$P = \left[\frac{V}{R_i + R_L}\right]^2 R_L$$

Generated voltage (V) and (R_i) are connected, so power delivered to load depend upto R_L for power is max differentiate w.r.t R_L

$$\frac{dP}{dR_L} = 0$$

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$$\Rightarrow \frac{V^2\left[(R_L+R_i)^2 - 2R_L(R_L+R_i)\right]}{(R_L+R_i)^2} = 0$$

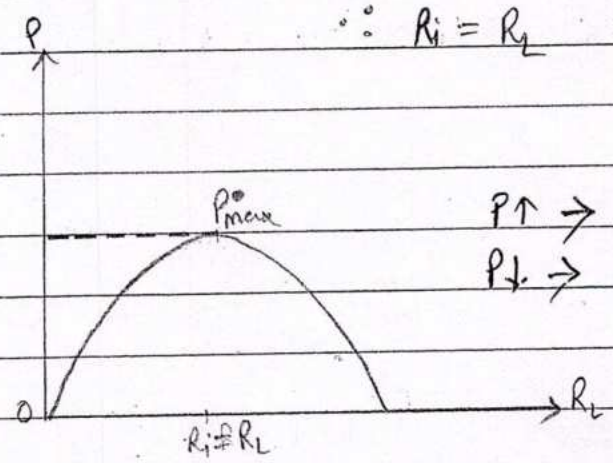
$$\Rightarrow (R_L+R_i)^2 - 2R_L(R_L+R_i) = 0$$

$$\Rightarrow (R_L+R_i)(R_L+R_i-2R_L) = 0$$

$$\Rightarrow (R_L+R_i)(R_i-R_L) = 0$$

$(R_L+R_i) \neq 0$ $\qquad$ $R_i - R_L = 0$

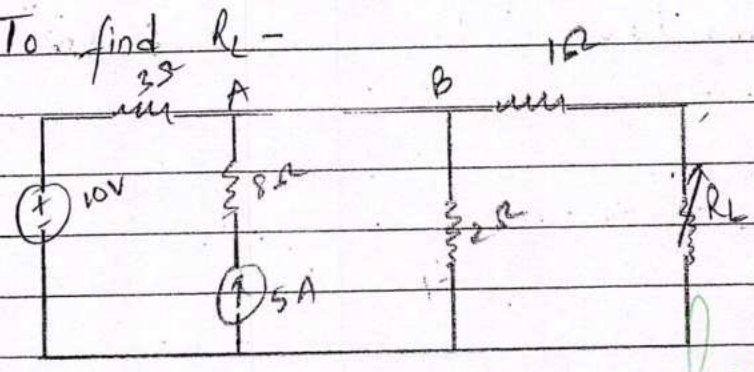
$\therefore R_i = R_L$



$P\uparrow \rightarrow R_i > R_L$

$P\downarrow \rightarrow R_i < R_L$

To find R_L –



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$V_{Th} = V_{AB} = V_B - V_A$

$= 0 - 40 = -40\,V$

$V_A = 5 \times 8 = 40\,A$

$V_B = 0$

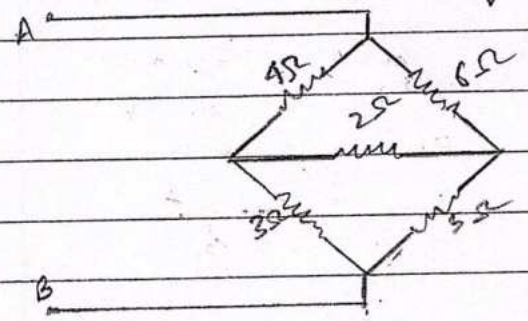
$R_i = (3+8) \parallel 40$

$= \frac{11 \times 40}{51} = \frac{440}{51} = 8.627\,\Omega$

$\because R_i = R_L$

$\Rightarrow R_L = 8.627\,\Omega$

Illustrate the following terminologies –
i) Bilateral circuit element.
ii) Passive circuit element.
iii) Linear circuit elements.
Also calculate the equivalent resistance between A–B of the circuit in figure:



⇒ i) Bilateral circuit elements – An electrical circuit whose characteristics properties remain same in either of direction.

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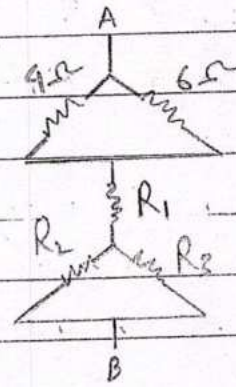
ii) Passive circuit elements-
These element which receives energy are called Passive element.

iii) Linear circuit elements - The resistive elements for which the volt ampere characteristics is straight line are called linear and the circuit containing only linear resistances are called linear circuit.

The equivalent Resistance between A-B



$$R_1 = \frac{2+3}{2+3+3}$$

$$= \frac{5}{8}\ \Omega$$

$$R_2 = \frac{3+3}{2+3+3}$$

$$= \frac{6\ \Omega}{8} =$$

$$R_3 = \frac{3+2}{2+3+3} = \frac{5}{8}\ \Omega$$

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$$R_A = \frac{4+6}{} = 10\,\Omega$$

$$R_B = R_2 + R_3 = \frac{6}{8} + \frac{5}{8} = \frac{11}{8}\,\Omega$$

$$R_{AB} = R_A + R_1 + R_B$$

$$= 10 + \frac{5}{8} + \frac{11}{8}$$

$$= \frac{80+5+11}{8} = \frac{96}{8} = 12\,\Omega$$

b) State and explain the Norton's Theorems with help of example.

⇒ Norton's Theorem – It states that the current flowing through a resistance connected across any two terminals of a network can be determined by replacing the whole network by an equivalent circuit of a current sources having a current output (I_n) in parallel with resistance (R_n).

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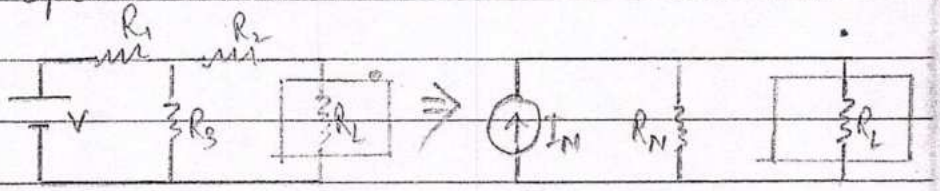
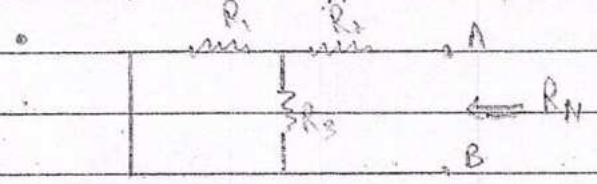
→ I_n = Norton current [short circuit supplied by the source that would flow between the two selected terminals when they s.c].

R_N = Equivalent Resistance of network between two terminals.

EMF source replaced by internal resistance and current source by open circuit.



Resistance R_N = Norton Resistance



$$R_N = (R_1 \| R_3) + R_2$$

$$R_N = \left(\frac{R_1 R_3}{R_1 + R_3}\right) + R_2$$

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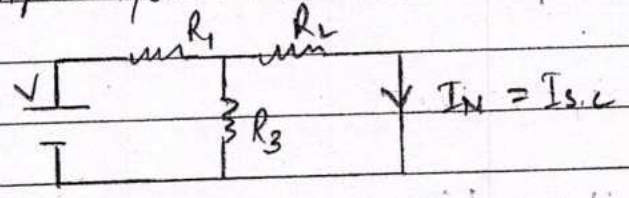
Example for Norton's Theorem –



Here, $I_N = ?$

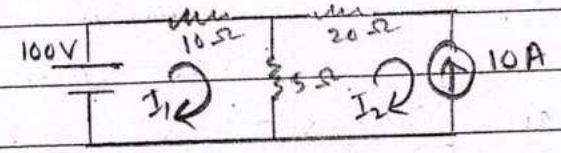
$$R_{Total} = (R_2 \| R_3) + R_1$$

$$I = \frac{V}{R_{Total}} = \frac{V}{(R_2 \| R_3) + R_1}$$

current division Rule –

$$I_N = I \times \frac{R_3}{R_2 + R_3} = \frac{V}{(R_2 \| R_3) + R_1} \times \frac{R_3}{R_2 + R_3}$$

c) Find the currents in all the resistive branches shown in fig –
1. KCL 2. KVL



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⇒ By using KVL.

In loop I, $10I_1 + 5(I_1 - I_2) - 100 = 0$

$15I_1 - 5I_2 = 100$

$\Rightarrow 3I_1 - I_2 = 20$

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In loop 2, $I_2 = -10A$

$$3I_1 - (-10) = 20$$

$$I_1 = \frac{20}{3} = 3.33A$$

Current through $10\Omega = 3.33A$
current through $5\Omega = (10 - 3.33)A = -6.66A$
Current through $20\Omega = -10A$

3.

a) Show that the average power demand in purely inductive A.C circuit is zero.

⇒ We know that in pure inductive circuit current is lagging by 90° from voltage i.e, the phase difference between current and voltage is 90°. As explained above if current and voltage are 90° out of phase from each other like in pure inductive circuit the total power of the circuit would be '0' as follows —

$$P = VI\cos\theta$$

If angle between current and voltage are 90° ($\theta = 90°$) then

$$\text{Power}, P = VI\cos 90 = 0$$

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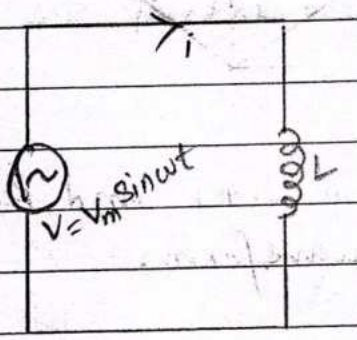
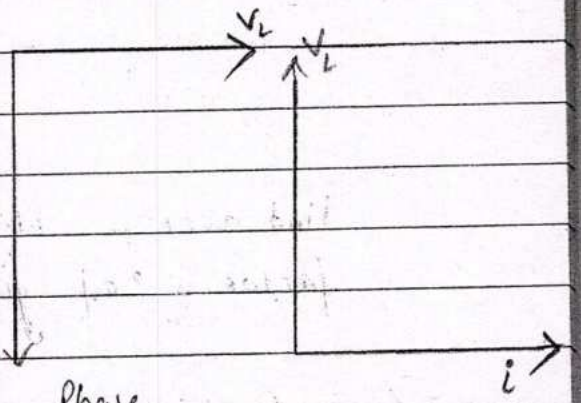
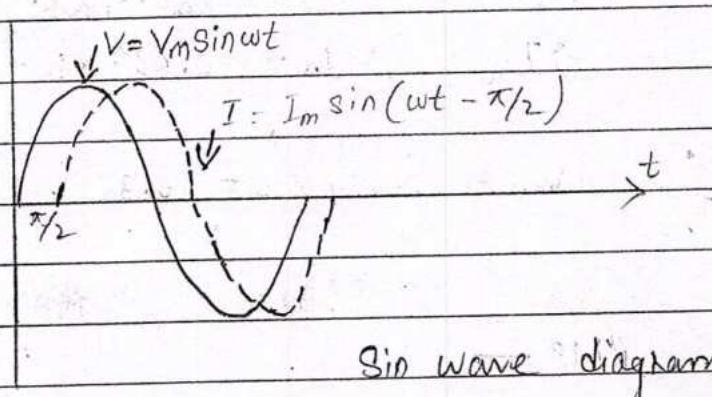
This shows that in case of pure inductive circuit, the total power of the circuit would have zero as $\cos 90 = 0$.



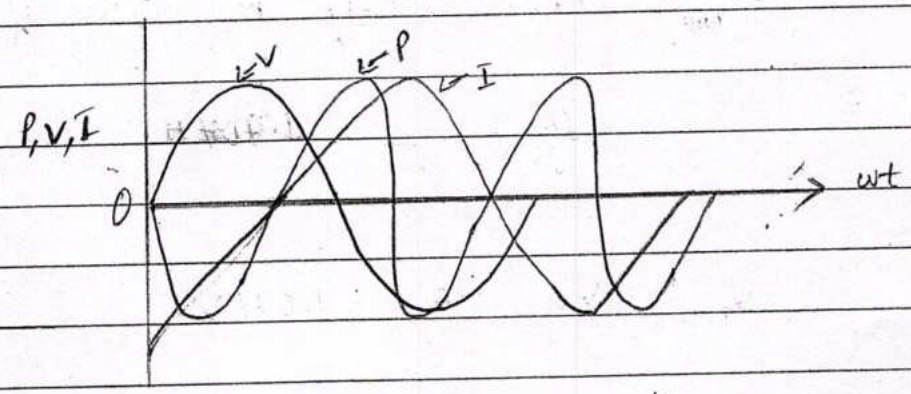
Pure inductive circuit



Phase difference diagram



Sin wave diagram



wave diagram

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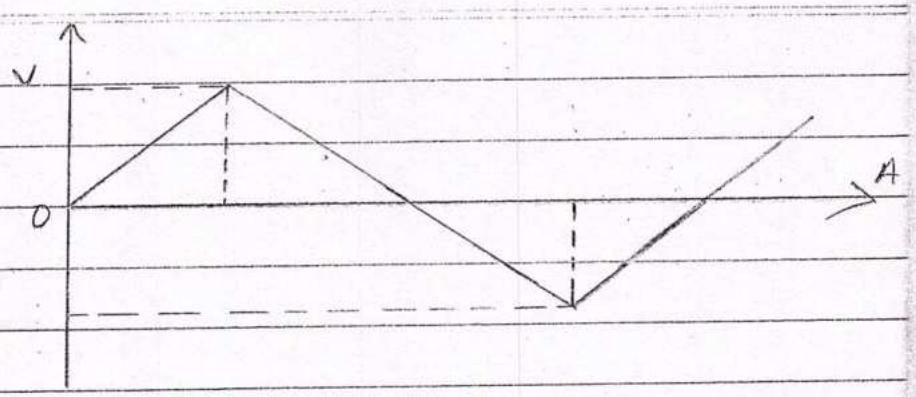
b)



Find average, RMS, Form factor and Peak factor of given waveform.

⇒ Average value –

$I_{av} = \frac{\text{Area of First half cycle}}{\pi}$

$\Rightarrow I_{av} = \frac{2}{\pi} I_m = 0.637 \times 1 = 0.637\ A$

$V_{av} = 0.637 \times 10 = 6.37\ V$

RMS –

$I_{rms} = \frac{\text{Area of First half cycle of } I^2}{\pi}$

$= \frac{I_m}{\sqrt{2}} = \frac{1}{\sqrt{2}} = 0.707\ A$

$V_{rms} = \frac{V_m}{\sqrt{2}} = \frac{10}{\sqrt{2}} = 7.071\ V$

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Form factor $= \frac{I_{rms}}{I_{av}} = \frac{I_m/\sqrt{2}}{2I_m/\pi} = 1.11$

Peak factor $= \frac{I_m}{I_{rms}} = \frac{I_m}{I_m/\sqrt{2}} = \sqrt{2} = 1.414$

c) An alternating voltage is given by $V = 141.4 \sin 314t$. Find

(1) Frequency (2) RMS value (3) Average value (4) Instantaneous value of voltage when t is 3 msec (5) time taken for the voltage to reach 100V for the first time after passing through zero value.

$\Rightarrow$ $V = 141.4 \sin 314t = V_m 2\pi f t$

(1) $f = \frac{314}{2\pi} = \frac{314}{2 \times 3.14} = 50$ Hz

(2) $V_{rms} = \frac{V_m}{\sqrt{2}} = \frac{141.4}{\sqrt{2}} = 100V$

(3) $V_{av} = \frac{2V_m}{\pi} = 0.637 \times 141.4 = 90V$

(4) At $t = 3$ msec

$V = 141.4 \sin 314 \times 0.03 = 141.4 \sin 0.942$

$\Rightarrow V = 114.4V$

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VMBUTU/ UBTER- I Continuous Internal Evaluation (Even Semester -April- 2023)

Course name with Code : Basic Electrical Engineering **Semester : 2nd**

Programme : B.Tech **Branch : Computer Science Engineering**

Date and Time : 13/APRIL/2023 10-11.30AM **Max. Marks : 30**

S.No:	Roll No.	Name	Marks in Figure	Marks in Words
61	220120101063	DIVYANSHU JAISWAL	15	FIFTEEN
62	220120101064	ELEM DEBBARMA	18	EIGHTEEN
63	220120101065	Gaurav Kumar	19	NINTEEN
64	220120101066	Gaurav Panwar	18	EIGHTEEN
65	220120101067	Gaureesh B Tomar	28	TWENTY EIGHT
66	220120101068	Hans Raj Singh	17	SEVENTEEN
67	220120101069	Hardik Choudhary	15	FIFTEEN
68	220120101070	Harsh	15	FIFTEEN
69	220120101071	HARSH KUMAR	24	TWENTY FOUR
70	220120101072	Harsh Narayan Pandey	16	SIXTEEN
71	220120101073	HARSH RAJ	16	SIXTEEN
72	220120101074	HARSH RAJ	25	TWENTY FIVE
73	220120101075	Harshit kumar	16	SIXTEEN
74	220120101076	Himanshu bisht	16	SIXTEEN
75	220120101077	Himanshu kumar	21	TWENTY ONE
76	220120101078	Himanshu Tyagi	25	TWENTY FIVE
77	220120101079	himanshu vardhan raj	14	FOURTEEN
78	220120101080	Hrishavh chandrawanshi	18	EIGHTEEN
79	220120101081	Ilma fazil	19	NINTEEN
80	220120101082	ISHA SINGH	19	NINTEEN
81	220120101083	ISHAAN VATSAL	20	TWENTY
82	220120101084	JATIN SINGH BISHT	26	TWNETY SIX
83	220120101085	JAY RAJ	15	FIFTEEN
84	220120101086	Jay shankar patel	18	EIGHTEEN
85	220120101087	Kamal Singh Sugra	15	FIFTEEN
86	220120101088	KARN KUMAR GAUTAM	19	NINTEEN
87	220120101089	KARTIK PANDEY	23	TWENTY THREE
88	220120101090	KHUB LAL MANDAL	17	SEVENTEEN
89	220120101091	KISHANKUMAR	16	SIXTEEN
90	220120101092	KRISHNANSH KACKAR	15	FIFTEEN
91	220120101093	KUMAR SONU NIGAM	28	TWENTY EIGHT
92	220120101094	LAKSHYA TYAGI	22	TWENTY TWO
93	220120101095	MADHULIKA CHOUDHARY	22	TWENTY TWO
94	220120101096	Mahesh pandit	16	SIXTEEN
95	220120101097	MANISH DOGRA	19	NINTEEN
96	220120101098	Manshi kumari	18	EIGHTEEN
97	220120101099	Md Ashraful Haque	16	SIXTEEN
98	220120101100	MOHAMMAD ANAS KHAN	15	FIFTEEN
99	220120101101	Mohd Aasif	15	FIFTEEN
100	220120101102	Mohd Aatif	23	TWENTY THREE
101	220120101103	Mohd Anas	17	SEVENTEEN
102	220120101104	MOHD ANAS	18	EIGHTEEN
103	220120101105	MUHEET MEHRAJ	16	SIXTEEN
104	220120101106	MUKESH SINGH CHAUHAN	19	NINTEEN
105	220120101107	MUKUL KUMAR	16	SIXTEEN
106	220120101108	MUNNA KUMAR	19	NINTEEN
107	220120101109	MUSHEER ALAM	15	FIFTEEN
108	220120101110	NEERAJ PANDEY	18	EIGHTEEN
109	220120101111	Nitin Kumar	25	TWENTY FIVE
110	220120101112	Nitish	27	TWENTY SEVEN
111	220120101113	Om Singh	19	NINTEEN
112	220120101114	PAWAN KUMAR	24	TWENTY FOUR
113	220120101115	PIYUSH KESHRI	20	TWENTY
114	220120101116	PIYUSH KUMAR PANIGRAHI	18	EIGHTEEN
115	220120101117	PRANAV KUMAR	16	SIXTEEN
116	220120101118	PRASHANT SINGH	15	FIFTEEN
117	220120101119	PRINCE KUMAR	19	NINTEEN
118	220120101120	PRIYANK SINGH	19	NINTEEN
119	220120101121	PULKIT FAUZDAR	18	EIGHTEEN
120	220120101122	Rabina kumari sah	21	TWENTY ONE

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Assessment of Learning Levels

The institution categorizes the learning levels of the students into three categories: ***Advance Learners***, ***Average Learners***, and ***Slow Learners***. Based on the learning levels, the institute organizes specialized student programs.

A. Criteria for Assessment of Learning Levels

The *primary tools used to assess the learning levels* of students.:

1. Performance of student in Continuous Internal Evaluation -1 (CIE-1).
2. Teacher Assessment of students in classes.

The *weights assigned to each criterion* for the distribution of **Total Marks (100)**:

1. Percentage in Continuous Internal Evaluation -1 (CIE-1) amounts to **50%** of the total weightage.
2. Teacher Assessment of student's performance in classes amounts to **50%** of the total weightage.

Table 1.1 shows a sample format of the Student Assessment Review Table.

S.N.	Roll No.	Student Name	CIE-1	Teacher Assessment (TA)	Weightage (CIE-1)	Weightage (Teacher Assessment)	Total Marks
			30	10	50%	50%	100

Table 1.1 Student Assessment Review Table

The Students Assessment Review Table is then used to identify different *learning levels based on student performance as per the following criteria*:

1. If a student scores **less than 60%** on Total Marks, they are classified as a ***Slow Learner***.
2. If a student scores **above 60% and less than 75%**, they are classified as an ***Average Learner***.
3. If a student scores **greater than or equal to 75%**, they are classified as an ***Advance Learner.***

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Tula's Institute, Dhoolkot, Dehradun

Course name with Code : Basic Electrical Engg. EET-001 **Semester : II**

Advance and slow learner identification

S.No:	Roll No.	Name	CIE(30)	Teacher Assessment (TA(10))	Weightage (CIE-1)50%	Weightage (Teacher Assessment 50%)	Total Marks(100)	Learners
1	220120101063	DIVYANSHU JAISWAL	15	7	25	35	60	Slow Learner
2	220120101064	ELEM DEBBARMA	18	7	30	35	65	Average Learner
3	220120101065	Gaurav Kumar	19	7	32	35	67	Average Learner
4	220120101066	Gaurav Panwar	18	7	30	35	65	Average Learner
5	220120101067	Gaureesh B Tomar	28	8	47	40	87	Advance Learner
6	220120101068	Hans Raj Singh	17	7	28	35	63	Average Learner
7	220120101069	Hardik Choudhary	15	7	25	35	60	Slow Learner
8	220120101070	Harsh	15	7	25	35	60	Slow Learner
9	220120101071	HARSH KUMAR	24	9	40	45	85	Advance Learner
10	220120101072	Harsh Narayan Pandey	16	7	27	35	62	Average Learner
11	220120101073	HARSH RAJ	16	6	27	30	57	Slow Learner
12	220120101074	HARSH RAJ	25	9	42	45	87	Advance Learner
13	220120101075	Harshit kumar	16	7	27	35	62	Average Learner
14	220120101076	Himanshu bisht	16	8	27	40	67	Average Learner
15	220120101077	Himanshu kumar	21	9	35	45	80	Advance Learner
16	220120101078	Himanshu Tyagi	25	7	42	35	77	Advance Learner
17	220120101079	himanshu vardhan raj	14	5	23	25	48	Slow Learner
18	220120101080	Hrishavh chandrawanshi	18	5	30	25	55	Slow Learner
19	220120101081	Ilma fazil	19	7	32	35	67	Average Learner
20	220120101082	ISHA SINGH	19	8	32	40	72	Average Learner
21	220120101083	ISHAAN VATSAL	20	9	33	45	78	Advance Learner
22	220120101084	JATIN SINGH BISHT	26	7	43	35	78	Advance Learner
23	220120101085	JAY RAJ	15	5	25	25	50	Slow Learner
24	220120101086	Jay shankar patel	18	6	30	30	60	Slow Learner
25	220120101087	Kamal Singh Sugra	15	5	25	25	50	Slow Learner
26	220120101088	KARN KUMAR GAUTAM	19	5	32	25	57	Slow Learner
27	220120101089	KARTIK PANDEY	23	9	38	45	83	Advance Learner
28	220120101090	KHUB LAL MANDAL	17	7	28	35	63	Average Learner
29	220120101091	KISHANKUMAR	16	8	27	40	67	Average Learner
30	220120101092	KRISHNANSH KACKAR	15	7	25	35	60	Slow Learner
31	220120101093	KUMAR SONU NIGAM	28	7	47	35	82	Advance Learner
32	220120101094	LAKSHYA TYAGI	22	8	37	40	77	Advance Learner
33	220120101095	MADHULIKA CHOUDHARY	22	9	37	45	82	Advance Learner
34	220120101096	Mahesh pandit	16	7	27	35	62	Average Learner
35	220120101097	MANISH DOGRA	19	6	32	30	62	Average Learner
36	220120101098	Manshi kumari	18	6	30	30	60	Slow Learner
37	220120101099	Md Ashraful Haque	16	7	27	35	62	Average Learner
38	220120101100	MOHAMMAD ANAS KHAN	15	8	25	40	65	Average Learner
39	220120101101	Mohd Aasif	15	6	25	30	55	Slow Learner
40	220120101102	Mohd Aatif	23	7	38	35	73	Average Learner
41	220120101103	Mohd Anas	17	6	28	30	58	Slow Learner
42	220120101104	MOHD ANAS	18	7	30	35	65	Average Learner
43	220120101105	MUHEET MEHRAJ	16	7	27	35	62	Average Learner
44	220120101106	MUKESH SINGH CHAUHAN	19	6	32	30	62	Average Learner
45	220120101107	MUKUL KUMAR	16	7	27	35	62	Average Learner
46	220120101108	MUNNA KUMAR	19	7	32	35	67	Average Learner
47	220120101109	MUSHEER ALAM	15	6	25	30	55	Slow Learner
48	220120101110	NEERAJ PANDEY	18	5	30	25	55	Slow Learner
49	220120101111	Nitin Kumar	25	7	42	35	77	Advance Learner
50	220120101112	Nitish	27	9	45	45	90	Advance Learner
51	220120101113	Om Singh	19	5	32	25	57	Slow Learner
52	220120101114	PAWAN KUMAR	24	7	40	35	75	Advance Learner
53	220120101115	PIYUSH KESHRI	20	8	33	40	73	Average Learner
54	220120101116	PIYUSH KUMAR PANIGRAHI	18	6	30	30	60	Slow Learner
55	220120101117	PRANAV KUMAR	16	6	27	30	57	Slow Learner
56	220120101118	PRASHANT SINGH	15	6	25	30	55	Slow Learner
57	220120101119	PRINCE KUMAR	19	6	32	30	62	Average Learner
58	220120101120	PRIYANK SINGH	19	6	32	30	62	Average Learner
59	220120101121	PULKIT FAUZDAR	18	6	30	30	60	Slow Learner
60	220120101122	Rabina kumari sah	21	7	35	35	70	Average Learner

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HoD
Department of Applied Sciences & Engineering
Tula's Institute, Dehradun

Ref. No. ASE/faculty/2023/04 Date: 20th April 2023

NOTICE

Remedial Classes

The commencement of remedial classes for Basic Electrical Engineering for students in the first year of computer science engineering who may benefit from additional support and guidance.

These classes are designed to provide personalized assistance to those who require extra help in grasping fundamental concepts and achieving academic success.

The Date and timing will be announced by subject teacher.

Faculty Coordinator:
Abhishek Chakravorty
HoD (EEE/ECE Department)

HoD
Department of E&E Engineering
Tula's Institute, Dehradun

HoD
Applied Sciences & Engineering
Tula's Institute, Dehradun

CC:
HoD (Applied Science Engineering)

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Tula's Institute, Dhoolkot, Dehradun

Basic Electrical Engg. EET-001

Semester : II

Remedial classes

S.No:	Roll No.	Student Name	22/04/23	29/04/23	6/5/23
1	220120101009	ABHISHEK MAURYA	P	P	P
2	220120101013	Aditya Kumar	P	P	P
3	220120101021	AKRITI KUMARI	P	P	P
4	220120101026	Aman singh	A	P	P
5	220120101028	AMAN SINGH RAWAT	P	P	A
6	220120101030	ANAS EJAZ KHAN	A	P	P
7	220120101039	ANURAG SINGH	P	P	A
8	220120101041	ARJUN DEVBRAT	P	P	P
9	220120101043	ARPIT SHARMA	P	A	P
10	220120101046	Ashish kumar	P	A	P
11	220120101050	Avnish singh chauhan	A	A	A
12	220120101051	AYUSH KUMAR	P	A	P
13	220120101058	DEVANSH INDOLIYAN	P	P	A
14	220120101062	Dipendra Singh kalura	A	P	P
15	220120101063	DIVYANSHU JAISWAL	P	P	P
16	220120101069	Hardik Choudhary	A	A	P
17	220120101070	Harsh	P	P	P
18	220120101073	HARSH RAJ	A	P	P
19	220120101079	himanshu vardhan raj	P	P	P
20	220120101080	Hrishavh chandrawanshi	P	P	P
21	220120101085	JAY RAJ	A	A	P
22	220120101086	Jay shankar patel	P	A	P
23	220120101087	Kamal Singh Sugra	P	P	P
24	220120101088	KARN KUMAR GAUTAM	P	P	P
25	220120101092	KRISHNANSH KACKAR	A	P	P
26	220120101098	Manshi kumari	P	P	P
27	220120101101	Mohd Aasif	P	A	P
28	220120101103	Mohd Anas	P	A	P
29	220120101109	MUSHEER ALAM	A	A	P
30	220120101110	NEERAJ PANDEY	A	P	P
31	220120101113	Om Singh	P	P	P
32	220120101116	PIYUSH KUMAR PANIGRAHI	P	A	A
33	220120101117	PRANAV KUMAR	P	P	P
34	220120101118	PRASHANT SINGH	A	P	P
35	220120101121	PULKIT FAUZDAR	P	A	P
36	220120101124	Rahul Priyadrashi	P	P	P
37	220120101127	RAJNISH KUMAR SINGH	P	P	P
38	220120101130	RAUSHAN KUMAR	A	P	P
39	220120101131	Raushan kumar thakur	P	P	A
40	220120101138	SAKSHAM KAUSHIK	P	P	P
41	220120101142	sateesh kumar	A	A	A
42	220120101145	SATYESH KUMAR SINGH	P	P	P
43	220120101147	Sayan Banerjee	A	A	P
44	220120101148	Shaan	A	A	P
45	220120101149	SHADAB AKRAM	P	A	P
46	220120101151	SHIVAM RAJ	P	A	P
47	220120101154	SHRESHTH sharma	P	P	A
48	220120101155	SHREYANSH KUMAR	P	A	P
49	220120101165	SUDHANSHU KUMAR	P	A	P
50	220120101166	Sumit Gaurav	P	P	P
51	220120101167	Suraj	A	A	A
52	220120101168	SURAJ BELWAL	P	P	P
53	220120101170	Suraj Kumar Sharma	A	P	P
54	220120101172	SUSHANT ROUT	P	P	P
55	220120101173	Tushar verma	A	A	P
56	220120101176	Ujjwal Kumar	P	P	A
57	220120101184	Vishal kumar	P	A	P

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Extra Assignment-1

Q1. Differentiate the ideal and practical voltage and current sources [CO1] [L2]

Q2. Compare and elaborate KVL and KCL in electrical circuits [CO1] [L2]

Q3. Derive the Star to delta and delta to star conversion. [CO4] [L 3]

Q4. State and prove Superpostion theorem. [CO1] [L 2]

Q5. State and prove Thevenins theorem. [CO1] [L 2]

Q6. State and prove Nortons theorem [CO1] [L 2]

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Extra Assignment-2

Q1. Derive the relationship between phase and line terms in a star connected three phase system [CO 1] [L 3]

Q 2. Derive the relationship between phase and line terms in a delta connected three phase system [CO 4] [L 3]

Q 3. Illustrate the two wattmeter method for power measurement. [CO 4] [L 2]

Q 4. Derive the relation of power factor in a two wattmeter method. [CO1] [L 3]

Q 5. Compare series RLC and parallel RLC resonance. [CO1] [L 3]

Q 6. Differentiate types of power in electrical systems [CO1] [L 3]

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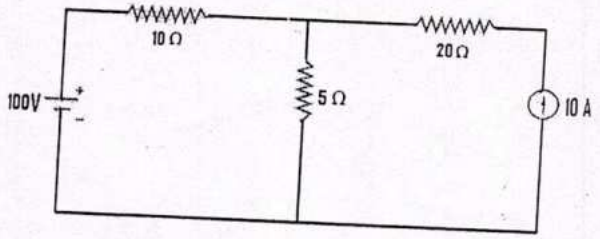
Question bank (Numerical Analysis)

Q1. Determine the currents in all the resistive branches of the circuit shown in fig: [CO 4, CO1] [L 3]

(i) KVL

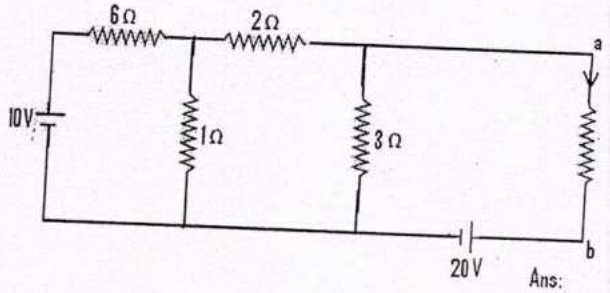
(ii) KCL



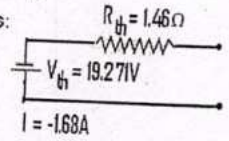
Ans: $I_{10\Omega} = 3.34A, I_{20\Omega} = 10A, I_{5\Omega} = 13.34A$

$I_1 = 3.33A, I_2 = 13.34A, I_3 = 10A$

Q2. Replace the network of the circuit in fig. to the left of the terminals ab by its Thevenin's equivalent circuit. Hence determine I. [CO 4] [L 4]



Ans:



Q3. Using Thevenin theorem calculate current in 13ohm resistance in fig: [CO 4] [L 4]

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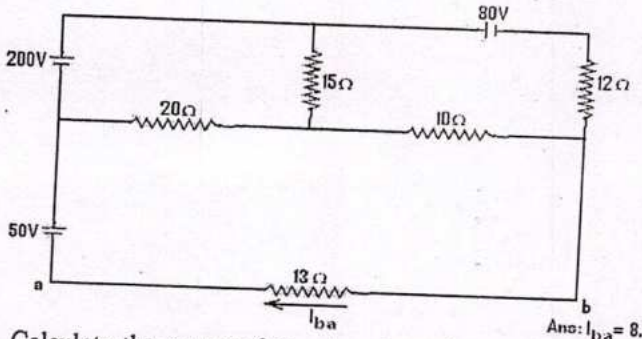
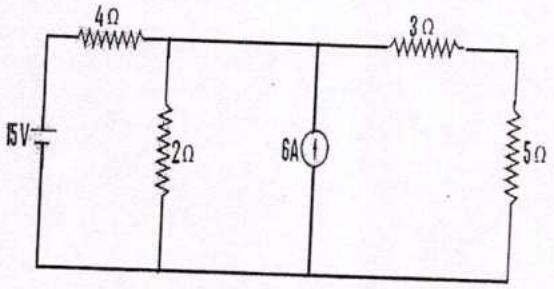


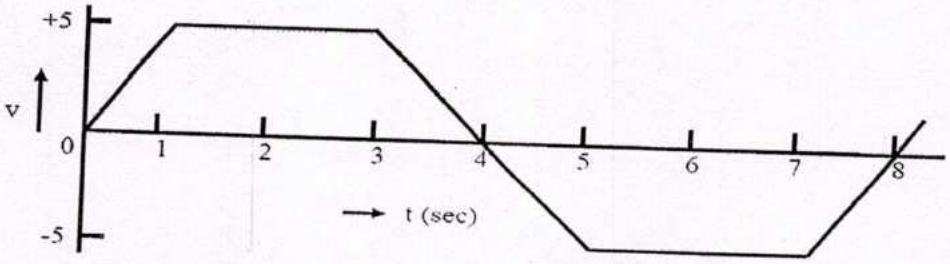
Ans: I_{ba} = 8.27A

Q4. Calculate the current following through the 5 ohm resistor in the network of fig: by using Thevenin Theorem. [CO 4] [L 4]



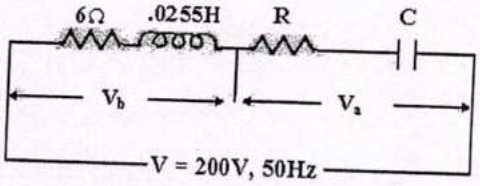
Ans: $I_{5\Omega}$ = 1.39A.

Q 5. Calculate average, RMS, Form factor and Peak factor of given waveform: [CO 4] [L 4]



[Ans:- 3.75,4.08,1.088,1.22]

Q 6. Calculate the value of R and C so that $V_b = 3V_a$ and V_b and V_a are in quadrature. Find also the phase relation between V and V_b; V_a and I. [CO 4] [L 4]



Ans. R = 2.66 Ω; C = 1590μF

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Department of Computer Science Engineering

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Subject Name with Code: Basic Electrical Engg (EET-001) **Time Duration: 90min**
Program/Branch/Year: B.TECH/CSE/1st YEAR **Maximum Marks: 30**

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

a). The parallel resonant circuit increases the _____ of a circuit. (CO3)(Level 1)

1. Voltage 2. Resistance 3. Current 4. Inductance

b). The primary & secondary winding of a transformer are _____ coupled. (CO3)(Level 1)

1) electrically 2) magnetically

3) electrically & magnetically 4) none of these

c). The property of a magnetic circuit which opposes the formation of the flux is known as (CO4) (Level 1)

1. Reactance 2. Mmf 3. Permeance 4. Reluctance.

d). A transformer transforms ..... (CO4)(Level 1)

e). One kilowatt hour is same as ..... joules. (CO5)(Level 1)

f). Cells are connected in parallel to..... (CO5)(Level 1)

1. Increase the efficiency 2. Increase the current capacity

3. Increase the voltage output 4. Increase the internal resistance

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

a) In what way a practical transformer differs from an ideal transformer? Develop an equivalent circuit for the practical transformer. (CO3) (Level 4)

OR

Illustrate the Various losses occurs in Transformer. (CO3) (Level 3)

b) Enlist the various parts of DC machine and explain the function of each part. (CO4) (Level 3)

OR

Explain the B-H curve and hysteresis & eddy current losses? (CO4) (Level 3)

c) Illustrate the working and construction of MCB and also write the application of it. (CO5) (Level 3)

OR

Illustrate the various types of Batteries. (CO5) (Level 3)

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Subject Name with Code: Basic Electrical Engg (EET-001) **Time Duration: 90min**
Program/Branch/Year: B.TECH/CSE/1st YEAR **Maximum Marks: 30**

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

a). The circuit is said to be in resonance if the current is ..... With the applied voltage. (CO3)(Level 1)

1. In phase 2. 90° out of phase 3. Out of phase 4. 45° out of phase

b). The power factor is unity for the _____ resonant circuit. (CO3)(Level 1)

1. Series 2. Parallel 3. Both 1 & 2 4. None is correct

c). The property of a magnetic circuit which opposes the formation of the flux is known as (CO4) (Level 1)

1. Reactance 2. Mmf 3. Permeance 4. Reluctance.

d) A transformer transforms ..... (CO4)(Level 1)

1. Current 2. Voltage 3. Voltage & current 4.frequency

e). Cells are connected in parallel in order to (CO5) (Level 1)

1. Increase the voltage available. 2. Reduce cost of wiring.
3. Increase the current available. 4. Reduce the time required to fully charge them after use.

f). Rating of fuse wire is expressed in ..... (CO5)(Level 1)

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

a) Explain the construction and working of single phase transformer. (CO3) (Level 2)

OR

Compare the similarities and dissimilarities between electric and magnetic circuits?(CO3) (Level 3)

b) Explain the constructional and operational feature of a DC machine with the help of neat diagram. (CO4) (Level 3)

OR

State the Types of DC motors. Discuss constructional details of any type of DC motor.(CO4) (Level 4)

c) Illustrate about ELCB and also write the application of it. (CO5) (Level 3)

OR

Illustrate the function and advantages of earthing. (CO5) (Level 3)

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

a) **Describe the various losses in a transformer and derive the condition of its maximum efficiency (CO3) (Level 4)**

OR

Ina 25kVA, 2000 V/200 V transformer the iron and copper losses are 200 W and 400 W respectively. Calculate the efficiency at half –full load and 0.8 power factor lagging. (CO3) (Level 4)

b) **Enlist the various parts of DC machine and explain the function of each part. (CO4) (Level 3)**

OR

Derive the EMF equation of transformer and explain the voltage transformation ratio.(CO4) (Level 4)

c) **An electric iron is rated 250 V, 500 W. What current will it take when connected to 250 V supply. If the iron is used for one hour daily for 30 days, what will be the monthly electricity bill at Rs 5 per unit? (CO5) (Level 4)**

OR

Classify the different types of wires and cables in electrical installation. (CO5) (Level 2)

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Even Semester (May-2023)

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

a) **Explain the PMMC and MI meters used in electrical system.** **(CO3) (Level 3)**

OR

Describe the Voltage Regulation and derive the condition of its maximum efficiency. (CO3) (Level 4)

b) **Explain the constructional and operational feature of a DC machine with the help of neat diagram.** **(CO4) (Level 4)**

OR

Discuss the principle, construction and working for single phase transformer. **(CO4) (Level 3)**

c) **An electric geyser is rated 250 V, 1000 W. What current will it take when connected to 250 V supply. If the geyser is used for one hour daily for 60 days, what will be the monthly electricity bill at Rs 8 per unit?** **(CO5) (Level 3)**

OR

Illustrate the advantages of protective devices used in electrical installations. **(CO5) (Level 3)**

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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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- Inculcate social, environmental, heritage values.

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Tula's Institute, Dhoolkot, Dehradun

VMBUTU/ UBTER- II Continuous Internal Evaluation (Even Semester -May- 2023)

Course name with Code : Basic Electrical Engineering **Semester : 2nd**

Programme : B.Tech **Branch : Computer Science Engineering**

Date and Time : 29-May-2023 10:00-11:30 am **Max. Marks : 30**

S.No:	Roll No.	Name	Marks in Figure	Marks in Words
61	220120101063	DIVYANSHU JAISWAL	15	FIFTEEN
62	220120101064	ELEM DEBBARMA	18	EIGHTEEN
63	220120101065	Gaurav Kumar	19	NINTEEN
64	220120101066	Gaurav Panwar	18	EIGHTEEN
65	220120101067	Gaureesh B Tomar	28	TWENTY EIGHT
66	220120101068	Hans Raj Singh	17	SEVENTEEN
67	220120101069	Hardik Choudhary	15	FIFTEEN
68	220120101070	Harsh	15	FIFTEEN
69	220120101071	HARSH KUMAR	24	TWENTY FOUR
70	220120101072	Harsh Narayan Pandey	16	SIXTEEN
71	220120101073	HARSH RAJ	16	SIXTEEN
72	220120101074	HARSH RAJ	25	TWENTY FIVE
73	220120101075	Harshit kumar	16	SIXTEEN
74	220120101076	Himanshu bisht	16	SIXTEEN
75	220120101077	Himanshu kumar	21	TWENTY ONE
76	220120101078	Himanshu Tyagi	25	TWENTY FIVE
77	220120101079	himanshu vardhan raj	14	FOURTEEN
78	220120101080	Hrishavh chandrawanshi	18	EIGHTEEN
79	220120101081	Ilma fazil	19	NINTEEN
80	220120101082	ISHA SINGH	19	NINTEEN
81	220120101083	ISHAAN VATSAL	20	TWENTY
82	220120101084	JATIN SINGH BISHT	26	TWENTY SIX
83	220120101085	JAY RAJ	15	FIFTEEN
84	220120101086	Jay shankar patel	18	EIGHTEEN
85	220120101087	Kamal Singh Sugra	15	FIFTEEN
86	220120101088	KARN KUMAR GAUTAM	19	NINTEEN
87	220120101089	KARTIK PANDEY	23	TWENTY THREE
88	220120101090	KHUB LAL MANDAL	17	SEVENTEEN
89	220120101091	KISHANKUMAR	16	SIXTEEN
90	220120101092	KRISHNANSH KACKAR	15	FIFTEEN
91	220120101093	KUMAR SONU NIGAM	28	TWENTY EIGHT
92	220120101094	LAKSHYA TYAGI	22	TWENTY TWO
93	220120101095	MADHULIKA CHOUDHARY	22	TWENTY TWO
94	220120101096	Mahesh pandit	16	SIXTEEN
95	220120101097	MANISH DOGRA	19	NINTEEN
96	220120101098	Manshi kumari	18	EIGHTEEN
97	220120101099	Md Ashraful Haque	16	SIXTEEN
98	220120101100	MOHAMMAD ANAS KHAN	15	FIFTEEN
99	220120101101	Mohd Aasif	15	FIFTEEN
100	220120101102	Mohd Aatif	23	TWENTY THREE
101	220120101103	Mohd Anas	17	SEVENTEEN
102	220120101104	MOHD ANAS	18	EIGHTEEN
103	220120101105	MUHEET MEHRAJ	16	SIXTEEN
104	220120101106	MUKESH SINGH CHAUHAN	19	NINTEEN
105	220120101107	MUKUL KUMAR	16	SIXTEEN
106	220120101108	MUNNA KUMAR	19	NINTEEN
107	220120101109	MUSHEER ALAM	15	FIFTEEN
108	220120101110	NEERAJ PANDEY	18	EIGHTEEN
109	220120101111	Nitin Kumar	25	TWENTY FIVE
110	220120101112	Nitish	27	TWENTY SEVEN
111	220120101113	Om Singh	19	NINTEEN
112	220120101114	PAWAN KUMAR	24	TWENTY FOUR
113	220120101115	PIYUSH KESHRI	20	TWENTY
114	220120101116	PIYUSH KUMAR PANIGRAHI	18	EIGHTEEN
115	220120101117	PRANAV KUMAR	16	SIXTEEN
116	220120101118	PRASHANT SINGH	15	FIFTEEN
117	220120101119	PRINCE KUMAR	19	NINTEEN
118	220120101120	PRIYANK SINGH	19	NINTEEN
119	220120101121	PULKIT FAUZDAR	18	EIGHTEEN
120	220120101122	Rabina kumari sah	21	TWENTY ONE

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19. RESULT ANALYSIS

S.No:	Roll No.	Name	SE-I	SE-II	AVG OF SE-I AND SE-II(30)	ASSIGN	SCT	SESS(50)
1	220120101063	DIVYANSHU JAISWAL	15	23	19	7	5	31
2	220120101064	ELEM DEBBARMA	18	20	19	7	5	31
3	220120101065	Gaurav Kumar	19	17	18	7	5	30
4	220120101066	Gaurav Panwar	18	20	19	7	5	31
5	220120101067	Gaureesh B Tomar	28	30	29	8	11	48
6	220120101068	Hans Raj Singh	17	21	19	7	5	31
7	220120101069	Hardik Choudhary	15	23	19	7	6	32
8	220120101070	Harsh	15	17	16	7	4	27
9	220120101071	HARSH KUMAR	24	20	22	9	5	36
10	220120101072	Harsh Narayan Pandey	16	20	18	7	5	30
11	220120101073	HARSH RAJ	16	16	16	6	5	27
12	220120101074	HARSH RAJ	25	23	24	9	7	40
13	220120101075	Harshit kumar	16	20	18	7	5	30
14	220120101076	Himanshu bisht	16	22	19	8	4	31
15	220120101077	Himanshu kumar	21	23	22	9	6	37
16	220120101078	Himanshu Tyagi	25	17	21	7	7	35
17	220120101079	himanshu vardhan raj	14	16	15	5	5	25
18	220120101080	Hrishavh chandrawanshi	18	20	19	5	7	31
19	220120101081	Ilma fazil	19	21	20	7	7	34
20	220120101082	ISHA SINGH	19	21	20	8	5	33
21	220120101083	ISHAAN VATSAL	20	30	25	9	8	42
22	220120101084	JATIN SINGH BISHT	26	16	21	7	7	35
23	220120101085	JAY RAJ	15	21	18	5	7	30
24	220120101086	Jay shankar patel	18	20	19	6	6	31
25	220120101087	Kamal Singh Sugra	15	17	16	5	6	27
26	220120101088	KARN KUMAR GAUTAM	19	17	18	5	7	30
27	220120101089	KARTIK PANDEY	23	21	22	9	5	36
28	220120101090	KHUB LAL MANDAL	17	21	19	7	5	31
29	220120101091	KISHANKUMAR	16	24	20	8	6	34
30	220120101092	KRISHNANSH KACKAR	15	23	19	7	5	31
31	220120101093	KUMAR SONU NIGAM	28	22	25	7	9	41
32	220120101094	LAKSHYA TYAGI	22	24	23	8	8	39
33	220120101095	MADHULIKA CHOUDHARY	22	20	21	9	5	35
34	220120101096	Mahesh pandit	16	22	19	7	6	32
35	220120101097	MANISH DOGRA	19	17	18	6	6	30
36	220120101098	Manshi kumari	18	20	19	6	6	31
37	220120101099	Md Ashraful Haque	16	20	18	7	5	30
38	220120101100	MOHAMMAD ANAS KHAN	15	21	18	8	4	30
39	220120101101	Mohd Aasif	15	23	19	6	6	31
40	220120101102	Mohd Aatif	23	25	24	7	9	40
41	220120101103	Mohd Anas	17	21	19	6	6	31
42	220120101104	MOHD ANAS	18	20	19	7	5	31
43	220120101105	MUHEET MEHRAJ	16	22	19	7	5	31
44	220120101106	MUKESH SINGH CHAUHAN	19	17	18	6	6	30
45	220120101107	MUKUL KUMAR	16	20	18	7	5	30
46	220120101108	MUNNA KUMAR	19	17	18	7	5	30
47	220120101109	MUSHEER ALAM	15	21	18	6	6	30
48	220120101110	NEERAJ PANDEY	18	20	19	5	8	32
49	220120101111	Nitin Kumar	25	17	21	7	7	35
50	220120101112	Nitish	27	29	28	9	10	47
51	220120101113	Om Singh	19	17	18	5	7	30
52	220120101114	PAWAN KUMAR	24	18	21	7	7	35
53	220120101115	PIYUSH KESHRI	20	26	23	8	7	38
54	220120101116	PIYUSH KUMAR PANIGRAHI	18	20	19	6	6	31
55	220120101117	PRANAV KUMAR	16	20	18	6	6	30
56	220120101118	PRASHANT SINGH	15	21	18	6	6	30
57	220120101119	PRINCE KUMAR	19	17	18	6	6	30
58	220120101120	PRIYANK SINGH	19	17	18	6	6	30
59	220120101121	PULKIT FAUZDAR	18	20	19	6	6	31
60	220120101122	Rabina kumari sah	21	23	22	7	7	37

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COURSE NAME	Basic Electrical Engineering		
COURSE CODE	EET-001	PROGRAM	B.Tech
BRANCH	CSE	YEAR	1st
SEMESTER			1st

S.N	ROLL No.	STUDENT'S NAME	SE I			SE- II			SE II	AVG OF SE I AND SE II	A1	A2	A3	A4	A5	ASSIGN	SC T1	SC T2	SC T3	SC T4	SC T5	SCT	SESS	CO1 Attended Y/N	CO2 Attended Y/N	CO3 Attended Y/N	CO4 Attended Y/N	CO5 Attended Y/N	SEE
			CO-1	CO-2	SE I	CO-03	CO-04	CO-05			CO-01	CO-02	CO-03	CO-04	CO-05		CO-01	CO-02	CO-03	CO-04	CO-05								
			15	15	30	10	10	10	30	30	2	2	2	2	2	10	2	2	2	2	2	10	50	19	19	14	14	14	100
1	220120101001	Aadarsh karna	9	12	21	6	8	9	23	22	2	1	1	1	1	6	2	1	1	2	2	8	36	N	Y	N	Y	Y	24
2	220120101002	Aakash	8	11	19	9	8	4	21	20	2	1	2	1	1	7	2	2	1	1	1	7	34	N	Y	Y	N	N	30
3	220120101003	AANCHAL CHANDRAVANSHI	9	13	22	9	8	7	24	23	2	1	2	2	1	8	2	2	2	1	1	8	38	N	Y	Y	Y	N	36
4	220120101004	Abhay Saxena	10	12	22	6	6	10	22	22	2	2	2	1	2	9	1	1	1	1	2	6	37	N	Y	N	N	Y	30
5	220120101005	Abhay yadav	10	14	24	7	9	10	26	25	2	1	1	1	1	6	2	2	2	2	2	10	41	Y	Y	N	Y	Y	28
6	220120101006	ABHINAV KUMAR SINGH	7	11	18	5	7	8	20	19	2	1	2	1	1	7	1	2	2	1	1	5	31	N	Y	N	N	N	46
7	220120101007	ABHINAV SINGH	10	13	23	8	8	5	21	22	2	1	2	2	1	8	1	1	2	1	1	6	36	N	Y	Y	Y	N	46
8	220120101008	ABHINAV SINGHAL	13	11	24	5	7	8	20	22	2	2	2	1	2	9	1	1	1	1	2	5	36	Y	Y	N	N	Y	37
9	220120101009	ABHISHEK MAURYA	7	10	17	9	8	4	21	19	1	1	2	1	1	6	1	2	1	1	1	6	31	N	N	Y	N	N	31
10	220120101010	ABHISHEK PAL	10	8	18	9	6	7	22	20	1	1	2	2	1	7	2	1	1	1	2	7	34	N	N	Y	N	N	50
11	220120101011	Abhishek Rawat	7	9	16	6	6	10	22	19	2	1	2	1	1	7	2	1	2	1	1	5	31	N	N	N	N	Y	44

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12	220120101012	ABU AAMIR	7	10	17	6	8	9	23	20	2	2	2	1	1	8	1	1	1	1	2	5	33	N	N	N	N	Y	39
13	220120101013	Aditya Kumar	7	9	16	3	5	6	14	15	1	1	1	2	0	5	2	1	2	1	1	5	25	N	N	N	N	N	29
14	220120101014	Aditya Raj	8	11	19	9	6	2	17	18	2	1	2	1	1	7	2	2	2	2	1	5	30	N	Y	Y	N	N	40
15	220120101015	ADITYA SHARMA	11	14	25	7	10	10	27	26	2	1	2	2	1	8	2	2	2	2	1	9	43	Y	Y	Y	Y	Y	47
16	220120101016	Aditya Singh	8	7	15	6	8	9	23	19	2	2	2	1	1	8	2	1	1	2	2	5	32	N	N	N	Y	Y	14
17	220120101017	AKANKSHA CHAUHAN	14	13	27	8	7	10	25	26	2	1	2	1	1	7	2	2	2	2	2	10	43	Y	Y	Y	N	Y	51
18	220120101018	AKASH KUMAR	11	14	25	10	8	5	23	24	2	1	1	2	1	7	2	2	2	2	1	9	40	Y	Y	Y	Y	N	37
19	220120101019	AKASH KUMAR	11	14	25	6	8	9	23	24	2	1	2	1	2	8	2	2	2	1	1	8	40	Y	Y	N	N	Y	43
20	220120101020	AKASH KUMAR RAI	11	14	25	5	5	9	19	22	2	1	2	2	2	9	2	1	2	1	1	5	36	Y	Y	N	N	Y	33
21	220120101021	AKRITI KUMARI	7	9	16	9	9	6	24	20	2	1	1	1	1	6	2	1	2	2	1	8	34	N	N	Y	Y	N	30
22	220120101023	ALOK	10	8	18	7	7	4	18	18	2	1	2	1	1	7	1	1	1	1	2	5	30	N	N	N	N	N	31
23	220120101024	ALOK KASHYAP	7	10	17	5	5	9	19	18	2	1	2	1	1	7	2	1	2	1	1	5	30	N	N	N	N	Y	11
24	220120101025	AMAN KUMAR SINGH	7	9	16	5	7	8	20	18	2	2	2	1	0	7	1	1	2	1	1	5	30	N	N	N	N	N	2
25	220120101026	Aman singh	8	7	15	8	8	5	21	18	2	1	1	1	1	6	2	1	1	1	1	6	30	N	N	N	N	N	11
26	220120101027	AMAN SINGH RAWAT	11	10	21	9	7	9	25	23	2	1	2	1	2	8	2	2	2	1	1	8	38	Y	N	Y	N	Y	40
27	220120101028	AMAN SINGH RAWAT	8	10	18	5	7	8	20	19	2	1	1	1	1	6	1	1	1	1	2	6	32	N	N	N	N	Y	34
28	220120101029	AMRESH KUMAR NIRALA	7	10	17	8	8	5	21	19	2	1	2	1	1	7	2	1	1	2	2	5	31	N	N	Y	Y	N	15
29	220120101030	ANAS EJAZ KHAN	6	8	14	6	6	10	22	18	2	1	2	1	1	7	1	1	1	1	2	5	30	N	N	N	N	Y	7
30	220120101031	ANIKET ADARSH	8	7	15	8	7	10	25	20	2	2	2	1	2	9	1	1	1	1	2	5	34	N	N	Y	N	Y	18
31	220120101032	Anirban sow	12	14	26	10	7	1	18	22	2	1	1	1	1	6	1	2	2	1	2	8	36	Y	Y	Y	N	N	11

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32	220120101033	ANKIT KUMAR BHAGAT	10	12	22	5	7	8	20	21	2	1	1	2	1	7	1	1	1	2	2	7	35	N	Y	N	Y	Y	40
33	220120101034	Ankit Raj Sharma	10	13	23	5	5	9	19	21	2	1	2	2	1	8	1	1	1	1	1	6	35	N	Y	N	N	Y	30
34	220120101035	ANKRITI KARN	10	12	22	10	8	10	28	25	2	2	2	1	2	9	2	2	1	1	1	7	41	Y	Y	Y	N	Y	45
35	220120101036	ANSH	8	11	19	6	8	7	21	20	2	1	1	1	1	6	2	2	2	1	1	8	34	N	Y	N	N	N	30
36	220120101037	ANSHUL CHAUHAN	8	11	19	6	8	7	21	20	1	1	2	2	1	7	2	2	1	1	1	7	34	N	Y	N	Y	N	20
37	220120101039	ANURAG SINGH	5	8	13	6	8	9	23	18	2	1	2	1	1	7	1	2	1	1	2	5	30	N	N	N	N	Y	1
38	220120101040	Arabin prasad chauhan	10	8	18	6	6	10	22	20	2	1	2	1	1	7	2	2	1	1	1	7	34	Y	N	N	N	Y	30
39	220120101041	ARJUN DEVBRAT	7	11	18	5	7	8	20	19	2	1	1	1	1	6	2	1	1	1	1	6	31	N	N	N	N	N	30
40	220120101042	Arnim Bhardwaj	9	12	21	6	8	9	23	22	2	1	1	1	1	6	2	1	2	2	2	9	37	N	Y	N	Y	Y	61
41	220120101043	ARPIT SHARMA	8	7	15	9	8	6	23	19	2	1	2	1	1	7	1	1	1	1	2	6	32	N	N	Y	N	N	18
42	220120101044	ARYAN KUMAR	10	13	23	9	7	9	25	24	2	1	2	1	2	8	1	2	2	1	2	8	40	N	Y	Y	N	Y	60
43	220120101045	ARYAN MITTAL	10	13	23	8	8	5	21	22	2	2	2	1	2	9	2	1	1	1	1	6	37	Y	Y	Y	N	N	36
44	220120101046	Ashish kumar	7	9	16	6	6	10	22	19	1	1	2	1	1	6	2	1	1	1	2	7	32	N	N	N	N	Y	30
45	220120101047	Ashish kumar singh	7	11	18	5	7	8	20	19	2	1	2	1	1	7	2	1	1	1	2	5	31	N	N	N	N	Y	59
46	220120101048	ASHISH RAJ	13	11	24	7	7	4	18	21	2	1	2	1	2	8	1	1	1	1	2	6	35	Y	N	N	N	N	67
47	220120101049	Avdesh Chamoli	7	10	17	8	8	5	21	19	2	2	2	1	0	7	2	1	2	1	1	5	31	N	N	Y	N	N	30
48	220120101050	Avnish singh chauhan	8	7	15	10	7	10	25	20	1	1	2	1	1	6	2	2	2	1	1	8	34	N	N	Y	N	Y	54
49	220120101051	AYUSH KUMAR	6	9	15	4	6	7	17	16	2	1	1	1	2	7	1	1	1	1	1	5	26	N	N	N	N	N	2
50	220120101052	AYUSH RANA	9	12	21	6	8	9	23	22	2	1	2	1	2	8	1	1	1	2	1	6	36	N	Y	N	Y	Y	59
51	220120101053	AYUSH TYAGI	8	11	19	9	6	2	17	18	2	2	2	1	0	7	2	2	2	2	1	5	30	N	Y	Y	N	N	40

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52	220120101054	Bilal Ahmad	8	11	19	4	6	7	17	18	1	1	2	1	1	6	1	1	1	1	2	6	30	N	N	N	N	N	32
53	220120101055	Bittu kumar	9	11	20	9	9	8	26	23	1	1	2	2	1	7	1	2	2	1	2	8	38	N	Y	Y	Y	Y	72
54	220120101056	Deepak Sharma	7	9	16	5	7	8	20	18	2	1	2	1	1	7	2	1	2	1	1	5	30	N	N	N	N	N	17
55	220120101057	Deepanshu Rana	11	14	25	5	5	9	19	22	2	2	2	1	2	9	1	1	2	1	1	6	37	Y	Y	N	N	Y	65
56	220120101059	Devanshu Purohit	0	0	1	0	0	0	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	N	N	N	N	N	AB
57	220120101060	dhruv chaudhary	10	12	22	7	9	8	24	23	1	1	2	2	1	7	2	2	2	2	1	9	39	N	Y	Y	Y	N	65
58	220120101061	Dhruv Dogra	10	13	23	8	8	5	21	22	2	1	2	2	1	8	1	1	1	1	2	6	36	N	Y	Y	Y	N	32
59	220120101062	Dipendra Singh kalura	12	16	28	10	10	10	30	29	2	1	2	2	2	9	2	2	2	2	2	10	48	Y	Y	Y	Y	Y	79
60	220120101063	DIVYANSHU JAISWAL	7	9	16	9	6	7	22	19	1	1	2	1	1	6	1	2	1	1	1	6	31	N	N	Y	N	N	30
61	220120101064	ELEM DEBBARMA	8	7	15	6	8	9	23	19	2	1	2	1	1	7	0	2	1	1	2	5	31	N	N	N	N	Y	40
62	220120101065	Gaurav Kumar	7	11	18	9	7	4	20	19	2	1	2	1	1	7	2	2	2	2	1	5	31	N	Y	Y	N	N	8
63	220120101066	Gaurav Panwar	8	11	19	10	10	10	17	18	2	2	2	1	0	7	2	2	2	2	2	5	30	N	Y	Y	Y	Y	54
64	220120101067	Gaureesh B Tomar	7	11	18	5	7	8	20	19	2	1	2	1	1	7	2	1	1	2	2	5	31	N	N	N	N	Y	16
65	220120101068	Hans Raj Singh	12	16	28	10	10	10	30	29	2	2	2	1	1	8	2	2	2	2	2	11	48	Y	Y	Y	Y	Y	60
66	220120101069	Hardik Choudhary	7	10	17	8	8	5	21	19	2	1	1	2	1	7	1	1	1	1	1	5	31	N	N	N	Y	N	32
67	220120101070	Harsh	8	7	15	6	8	9	23	19	2	1	2	1	1	7	1	1	1	1	2	6	32	N	N	N	N	Y	42
68	220120101071	HARSH KUMAR	6	9	15	4	6	7	17	16	2	1	1	2	1	7	2	1	1	2	1	4	27	N	N	N	N	N	50
69	220120101072	Harsh Narayan Pandey	13	11	24	5	7	8	20	22	2	2	2	1	2	9	2	1	2	1	1	5	36	Y	Y	N	N	Y	53
70	220120101073	HARSH RAJ	7	9	16	5	7	8	20	18	2	1	2	1	1	7	2	1	1	1	2	5	30	N	N	N	N	Y	43
71	220120101074	HARSH RAJ	7	9	16	4	4	8	16	16	2	1	2	2	-1	6	2	1	1	2	2	5	27	N	N	N	N	N	30

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72	220120101075	Harshit kumar	11	14	25	9	8	6	23	24	2	1	-2	2	2	9	2	2	1	1	1	7	40	Y	Y	Y	Y	N	79
73	220120101076	Himanshu bisht	7	9	16	5	7	8	20	18	2	1	1	2	1	7	2	2	1	1	1	5	30	N	N	N	N	N	2
74	220120101077	Himanshu kumar	7	9	16	6	6	10	22	19	2	1	2	2	1	8	2	1	2	1	1	4	31	N	N	N	N	Y	46
75	220120101078	Himanshu Tyagi	9	12	21	6	8	9	23	22	2	1	2	2	2	9	1	2	1	1	1	6	37	N	Y	N	Y	Y	42
76	220120101079	himanshu vardhan raj	11	14	25	4	6	7	17	21	2	1	2	1	1	7	2	2	1	1	1	7	35	Y	Y	N	N	N	49
77	220120101080	Hrishavh chandrawanshi	6	8	14	4	4	8	16	15	1	1	1	1	1	5	1	1	1	1	1	5	25	N	N	N	N	N	50
78	220120101081	Ilma fazil	7	11	18	5	7	8	20	19	1	2	1	1	0	5	2	1	2	1	1	7	31	N	Y	N	N	N	30
79	220120101082	ISHA SINGH	8	11	19	6	8	7	21	20	2	1	2	1	1	7	2	2	1	1	1	7	34	N	Y	N	N	N	30
80	220120101083	ISHAAN VATSAL	8	11	19	5	7	9	21	20	2	1	2	2	1	8	2	1	1	2	2	5	33	N	N	N	Y	Y	35
81	220120101084	JATIN SINGH BISHT	9	11	20	10	10	8	30	25	2	2	2	1	2	9	2	2	2	1	1	8	42	N	Y	Y	Y	Y	61
82	220120101085	JAY RAJ	12	14	26	4	4	8	16	21	2	1	2	1	1	7	1	1	1	2	2	7	35	Y	Y	N	N	Y	0
83	220120101086	Jay shankar patel	8	7	15	9	8	4	21	18	1	1	1	2	0	5	2	2	2	2	1	7	30	N	N	Y	Y	N	33
84	220120101087	Kamal Singh Sugra	7	11	18	9	7	4	20	19	2	2	2	2	-2	6	2	2	2	2	1	6	31	N	Y	Y	Y	N	58
85	220120101088	KARN KUMAR GAUTAM	6	9	15	4	6	7	17	16	1	1	1	1	1	5	2	1	2	1	1	6	27	N	N	N	N	N	30
86	220120101089	KARTIK PANDEY	8	11	19	4	6	7	17	18	1	1	1	1	1	5	1	2	1	0	2	7	30	N	Y	N	N	N	45
87	220120101090	KHUB LAL MANDAL	10	13	23	8	8	5	21	22	2	1	2	2	2	9	2	1	2	1	1	5	36	Y	Y	Y	Y	N	56
88	220120101091	KISHANKUMAR	7	10	17	8	8	5	21	19	2	1	2	1	1	7	2	2	1	1	1	5	31	N	N	Y	N	N	63
89	220120101092	KRISHNANSH KACKAR	7	9	16	9	9	6	24	20	2	1	2	2	1	8	1	1	1	1	2	6	34	N	N	Y	Y	N	33
90	220120101093	KUMAR SONU NIGAM	8	7	15	6	8	9	23	19	2	1	2	1	1	7	1	1	1	1	1	5	31	N	N	N	N	Y	54
91	220120101094	LAKSHYA TYAGI	13	15	28	6	6	10	22	25	2	1	2	2	0	7	2	2	1	2	2	9	41	Y	Y	N	N	Y	55

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92	220120101095	MADHULIKA CHOUDHARY	10	12	22	7	9	8	24	23	2	1	2	2	1	8	2	2	2	1	1	8	39	Y	Y	Y	Y	N	51
93	220120101096	Mahesh pandit	10	12	22	5	7	8	20	21	2	1	2	2	2	9	2	1	1	1	2	5	35	Y	Y	N	N	Y	52
94	220120101097	MANISH DOGRA	7	9	16	6	6	10	22	19	2	1	1	2	1	7	1	1	1	1	2	6	32	N	N	N	N	Y	61
95	220120101098	Manshi kumari	8	11	19	4	6	7	17	18	2	1	2	1	0	6	1	2	1	0	2	6	30	N	Y	N	N	N	45
96	220120101099	Md Ashraful Haque	7	11	18	5	7	8	20	19	2	2	2	1	-1	6	1	2	1	0	2	6	31	N	Y	N	N	N	60
97	220120101100	MOHAMMAD ANAS KHAN	7	9	16	5	7	8	20	18	2	1	2	1	1	7	2	2	2	2	1	5	30	N	N	N	N	N	59
98	220120101101	Mohd Aasif	8	7	15	8	8	5	21	18	2	1	2	1	2	8	2	1	1	2	2	4	30	N	N	Y	Y	N	52
99	220120101102	Mohd Aatif	8	7	15	6	8	9	23	19	2	2	2	1	-1	6	2	1	2	1	1	6	31	N	N	N	N	N	56
100	220120101103	Mohd Anas	10	13	23	7	8	10	25	24	2	1	2	1	1	7	2	2	2	2	1	9	40	Y	Y	Y	Y	Y	34
101	220120101104	MOHD ANAS	7	10	17	8	8	5	21	19	2	1	2	2	-1	6	1	2	1	0	2	6	31	N	N	Y	N	N	30
102	220120101105	MUHEET MEHRAJ	7	11	18	5	7	8	20	19	2	2	2	2	-1	7	1	2	1	0	2	5	31	N	Y	N	N	N	18
103	220120101106	MUKESH SINGH CHAUHAN	7	9	16	6	6	10	22	19	2	1	2	1	1	7	1	2	1	0	2	5	31	N	N	N	N	Y	30
104	220120101107	MUKUL KUMAR	8	11	19	4	6	7	17	18	2	1	2	1	0	6	1	2	1	0	2	6	30	N	Y	N	N	N	12
105	220120101108	MUNNA KUMAR	7	9	16	5	7	8	20	18	2	2	2	1	0	7	1	2	1	0	2	5	30	N	N	N	N	N	30
106	220120101109	MUSHEER ALAM	8	11	19	4	6	7	17	18	2	1	1	1	2	7	1	2	1	0	2	5	30	N	Y	N	N	Y	30
107	220120101110	NEERAJ PANDEY	8	7	15	8	8	5	21	18	2	1	2	2	-1	6	1	2	1	0	2	6	30	N	N	Y	N	N	30
108	220120101111	Nitin Kumar	8	10	18	5	7	8	20	19	1	2	1	2	-1	5	1	2	1	0	2	8	32	N	Y	N	N	N	30
109	220120101112	Nitish	11	14	25	4	6	7	17	21	2	1	1	2	1	7	1	1	1	2	2	7	35	Y	Y	N	N	N	47
110	220120101113	Om Singh	12	15	27	10	9	10	29	28	2	2	2	2	1	9	2	2	2	2	2	10	47	Y	Y	Y	Y	Y	53
111	220120101114	PAWAN KUMAR	8	11	19	4	6	7	17	18	1	2	1	2	-1	5	1	2	1	0	2	7	30	N	Y	N	N	N	9
112	220120101115	PIYUSH KESHRI	13	11	24	7	7	4	18	21	2	1	1	2	1	7	1	1	1	2	2	7	35	Y	N	N	Y	N	30
113	220120101116	PIYUSH KUMAR PANIGRAHI	9	11	20	7	9	10	26	23	2	1	2	2	1	8	1	1	1	2	2	7	38	N	N	N	Y	Y	31
114	220120101117	PRANAV KUMAR	7	11	18	5	7	8	20	19	2	2	2	2	-2	6	1	2	1	0	2	6	31	N	Y	N	N	N	32

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115	220120101118	PRASHANT SINGH	7	9	16	5	7	8	20	18	2	1	1	1	1	6	1	1	1	1	2	6	30	N	N	N	N	Y	30
116	220120101119	PRINCE KUMAR	8	7	15	8	8	5	21	18	2	1	1	1	1	6	1	2	1	1	1	6	30	N	N	N	N	N	37
117	220120101120	PRIYANK SINGH	8	11	19	4	6	7	17	18	1	1	2	1	1	6	1	1	1	1	2	6	30	N	N	N	N	N	32
118	220120101121	PULKIT FAUZDAR	8	11	19	4	6	7	17	18	1	1	2	1	1	6	1	1	1	1	2	6	30	N	N	N	N	N	30
119	220120101122	Rabina kumari sah	7	11	18	5	7	8	20	19	2	1	1	1	1	6	1	1	1	1	2	6	31	N	N	N	N	Y	32
120	220120101123	Raghav Singhal	9	12	21	6	8	9	23	22	2	1	2	1	1	7	2	1	1	1	2	7	37	N	Y	N	N	Y	42
121	220120101124	Rahul Priyadrashi	10	14	24	7	9	10	26	25	2	1	2	1	2	8	1	2	2	1	2	8	41	N	Y	Y	Y	Y	30
122	220120101125	Rajeev Ranjan	7	9	16	5	7	8	20	18	1	1	2	1	1	6	1	2	1	1	1	6	30	N	N	N	N	N	30
123	220120101126	RAJNISH KUMAR	10	12	22	5	7	8	20	21	2	1	2	1	1	7	2	1	1	1	2	7	35	Y	Y	N	N	Y	19
124	220120101127	RAJNISH KUMAR SINGH	8	11	19	4	6	7	17	18	2	1	2	1	1	6	2	1	1	1	1	6	30	N	N	N	N	N	34
125	220120101128	RAKESH KUMAR	7	10	17	8	8	5	21	19	2	1	1	1	1	6	1	1	1	1	2	6	31	N	N	N	N	N	30
126	220120101129	Ranjan Kumar	12	15	27	10	10	9	29	28	2	1	2	2	2	9	1	2	2	2	2	9	46	Y	Y	Y	Y	Y	39
127	220120101130	RAUSHAN KUMAR	11	14	25	4	6	7	17	21	2	1	1	2	1	7	2	1	1	1	2	7	35	Y	Y	N	N	N	13
128	220120101131	Raushan kumar thakur	8	7	15	8	8	5	21	18	2	1	1	1	1	6	1	1	1	1	2	6	30	N	N	N	N	N	37
129	220120101132	Raviranjan Kumar Ujjawal	8	10	18	5	7	8	20	19	1	1	2	1	1	6	2	1	1	1	1	6	32	N	N	N	N	N	32
130	220120101133	Rishabh Kumar mandal	8	11	19	4	6	7	17	18	1	1	2	1	1	6	1	1	1	1	2	6	30	N	N	N	N	N	30
131	220120101134	RISHAV GUPTA	11	14	25	5	5	9	19	22	2	1	2	2	0	7	1	1	1	2	2	7	36	Y	Y	N	N	Y	37
132	220120101135	Rishav Raj	11	14	25	8	9	10	27	26	2	1	2	2	2	9	2	1	2	2	2	9	43	Y	Y	Y	Y	Y	37
133	220120101136	RISHIKESH GAUTAM	9	12	21	6	8	9	23	22	2	1	2	2	1	8	1	1	1	1	2	6	36	N	Y	N	Y	Y	30
134	220120101137	Sahil Kumar Gupta	10	8	18	6	6	10	22	20	2	1	2	2	2	9	1	2	1	1	2	5	34	N	N	N	N	Y	32
135	220120101138	SAKSHAM KAUSHIK	8	11	19	6	8	7	21	20	2	1	2	1	1	7	2	2	1	1	1	7	34	N	Y	N	N	N	31
136	220120101141	SARTHAK CHANDRA	7	9	16	5	7	8	20	18	2	1	2	1	0	6	1	2	1	0	2	6	30	N	N	N	N	N	34
137	220120101142	sateesh kumar	8	11	19	4	6	7	17	18	2	2	1	1	1	7	1	1	1	1	1	5	30	N	Y	N	N	N	30
138	220120101143	Satendra Pratap Singh	8	7	15	6	8	9	23	19	2	1	2	1	0	6	1	2	1	0	2	6	31	N	N	N	N	Y	17

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139	220120101144	Satyam Sulabh	7	9	16	6	6	10	22	19	2	1	2	1	2	8	1	2	1	0	2	4	31	N	N	N	N	Y	12
140	220120101145	SATYESH KUMAR SINGH	8	10	18	5	7	8	20	19	2	1	2	2	2	9	1	2	1	0	2	4	32	N	N	N	N	Y	30
141	220120101146	SAURAV KUMAR	8	7	15	6	8	9	23	19	1	1	1	2	0	5	1	2	1	0	2	7	31	N	N	N	N	Y	17
142	220120101147	Sayan Banerjee	7	10	17	8	8	5	21	19	2	1	1	0	3	7	1	1	1	1	2	6	32	N	N	N	N	N	33
143	220120101148	Shaan	6	10	16	4	6	8	18	17	1	1	1	2	0	5	1	2	1	1	2	6	28	N	N	N	N	N	10
144	220120101149	SHADAB AKRAM	7	9	16	9	9	6	24	20	2	1	1	1	1	6	2	2	2	1	1	8	34	N	N	Y	Y	N	34
145	220120101150	SHAKHIT RAJ	8	7	15	9	8	8	25	20	2	1	2	2	0	7	2	2	1	1	1	7	34	N	N	Y	Y	N	25
146	220120101151	SHIVAM RAJ	13	11	24	10	8	10	28	26	2	1	2	2	1	8	2	2	2	2	2	10	44	Y	Y	Y	Y	Y	52
147	220120101152	shobha	10	8	18	4	4	8	16	17	1	2	1	1	1	6	1	2	1	0	2	5	28	N	N	N	N	Y	18
148	220120101153	SHREE BHANDARI	13	11	24	5	7	8	20	22	2	1	1	1	2	7	2	1	2	1	2	8	37	Y	N	N	N	Y	41
149	220120101154	SHRESHTH sharma	7	9	16	6	6	10	22	19	2	1	2	2	1	8	1	2	1	0	2	5	32	N	N	N	N	Y	33
150	220120101155	SHREYANSH KUMAR	7	9	16	5	7	8	20	18	1	1	2	1	1	6	2	1	1	1	1	6	30	N	N	N	N	N	36
151	220120101156	Shshank kaushal	8	7	15	8	8	5	21	18	1	1	1	2	0	5	1	2	1	0	2	7	30	N	N	N	N	N	31
152	220120101158	Shubham kumar jha	8	11	19	4	6	7	17	18	1	1	2	1	1	6	1	1	1	1	2	6	30	N	N	N	N	N	2
153	220120101159	Sidharth Kumar	7	9	16	5	7	6	18	17	2	1	2	1	1	7	1	2	1	0	2	5	29	N	N	N	N	N	36
154	220120101160	Siya Dogra	10	13	23	8	8	5	21	22	2	1	2	2	1	8	2	2	1	1	1	7	37	Y	Y	Y	Y	N	37
155	220120101161	Sonu Kumar	9	13	22	6	8	10	24	23	2	1	2	2	2	9	1	1	1	1	2	6	38	N	Y	N	Y	Y	33
156	220120101162	SONU KUMAR	9	11	20	7	9	10	26	23	2	1	2	1	1	7	2	2	2	1	1	8	38	N	Y	Y	Y	Y	39
157	220120101164	Subhash Sharma	10	8	18	6	6	10	22	20	2	1	2	2	1	8	1	2	1	1	2	5	33	N	N	N	N	Y	32
158	220120101165	SUDHANSHU KUMAR	7	11	18	5	7	8	20	19	2	1	1	1	2	7	1	1	1	1	1	5	31	N	N	N	N	Y	31
159	220120101166	Sumit Gaurav	8	7	15	7	8	10	25	20	2	1	2	1	1	7	2	1	1	1	1	6	33	N	N	N	N	Y	30
160	220120101167	Suraj	8	7	15	8	8	5	21	18	1	1	1	1	1	5	1	2	1	0	2	7	30	N	N	N	N	N	1
161	220120101168	SURAJ BELWAL	6	8	14	7	7	4	18	16	1	1	1	1	1	5	1	1	1	1	1	5	27	N	N	N	N	N	4
162	220120101169	suraj kumar	8	7	15	6	8	9	23	19	2	1	2	1	1	7	1	1	1	1	2	6	32	N	N	N	N	Y	38

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163	220120101170	Suraj Kumar Sharma	9	12	21	6	8	9	23	22	2	1	2	2	1	8	1	1	1	2	2	7	37	N	Y	N	Y	Y	40
164	220120101171	Suraj singh negi	7	9	16	5	7	8	20	18	1	2	1	1	0	5	1	2	1	0	2	7	30	N	N	N	N	N	6
165	220120101172	SUSHANT ROUT	11	14	25	5	5	9	19	22	2	1	2	1	1	7	2	2	1	1	1	7	36	Y	Y	N	N	Y	30
166	220120101173	Tushar verma	7	10	17	8	8	5	21	19	1	1	1	1	1	5	1	2	1	0	2	7	31	N	N	N	N	N	30
167	220120101174	UDAY BHATT	6	9	15	4	6	7	17	16	1	1	1	1	1	5	1	1	1	1	1	6	27	N	N	N	N	N	12
168	220120101175	ujjawal kumar singh	7	11	18	5	7	8	20	19	2	1	2	1	1	7	1	2	1	0	2	5	31	N	Y	N	N	Y	30
169	220120101176	Ujjwal Kumar	8	7	15	5	5	9	19	17	1	1	1	1	1	5	1	2	1	0	2	7	29	N	N	N	N	Y	30
170	220120101177	Vaibhav Chauhan	13	11	24	7	7	4	18	21	2	2	2	1	2	9	1	2	1	1	2	5	35	Y	Y	N	N	N	30
171	220120101178	Vaibhav kumar jha	10	12	22	5	7	8	20	21	2	1	1	2	1	7	1	1	1	2	2	7	35	N	Y	N	Y	Y	37
172	220120101179	Varnik Choudhary	7	9	16	9	9	6	24	20	2	1	2	2	1	8	2	1	1	1	1	6	34	N	N	Y	Y	N	32
173	220120101180	VIDHI KUMARI	11	14	25	4	6	7	17	21	2	1	2	2	2	9	1	2	1	1	2	5	35	Y	Y	N	N	Y	0
174	220120101181	VIKAS NEGI	8	11	19	4	6	7	17	18	2	1	2	1	1	7	1	2	1	0	2	5	30	N	Y	N	N	N	16
175	220120101182	Vikrant Singh Majila	7	9	16	6	6	10	22	19	2	1	2	1	2	8	1	2	1	0	2	4	31	N	N	N	N	Y	1
176	220120101183	Vinay Bhatt	13	11	24	7	7	4	18	21	2	2	2	1	2	9	1	2	1	1	2	5	35	Y	Y	N	N	N	23
177	220120101184	Vishal kumar	6	8	14	5	7	8	20	17	1	2	1	1	1	6	1	2	1	0	2	5	28	N	N	N	N	Y	3
178	220120101185	Yogesh	10	8	18	6	6	10	22	20	2	1	2	2	1	8	1	1	1	1	2	6	34	N	N	N	N	Y	30

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Total No. of Students Obtained Y	40	80	51	47	84		4
Total No. of Students Obtained N	138	98	127	131	94		13
Total No. of Students AB							
%age Attainment	22.5	44.9	28.7	26.4	47.2		23.
CO Wise Attainment Level	1	2	1	1	2		1
THRESHOLD	13.87	13.87	10.22	10.22	10.22		4
THRESHOLD PERCENTAGE %	73	73	73	73	73		4

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DIRECT ATTAINMENT OF IAT AND SEE						
CO #	DA OF CIE	DA OF SEE	CIE*.3	SEE*.7	DA of CIE+ SEE	Total CO Attainment
CO-01	1	1	0.3	0.7	1.00	1.00
CO-02	2	1	0.6	0.7	1.30	1.30
CO-03	1	1	0.3	0.7	1.00	1.00
CO-04	1	1	0.3	0.7	1.00	1.00
CO-05	2	1	0.6	0.7	1.30	1.30

Director
Tula's Institute, Dehradun

HoD
Department of Applied Sciences & Engineering
Tula's Institute, Dehradun

CO PO AND CO-PSO MAPPING

CO#	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
EET-001.1	3	1	-	-	1	-	-	-	-	1	-	-	-	-	
EET-001.2	2	2	-	-	2	-	2	-	-	-	-	-	-	-	
EET-001.3	2	1	-	-	1	-	-	-	-	1	-	-	-	-	
EET-001.4	3	1	-	1	-	-	-	1	-	-	-	-	-	-	
EET-001.5	1	2	-	-	1	-	-	-	-	-	-	-	-	-	
WT. AVG	2.2	1.4		1	1.25		2	1		1					
Overall Mapping of Subject															

PO-01

CO#	(COn-PO1)Map Value (B)	CO Atm Value (C)	(B/3)* C	CO-WISE PO-01 ATTAINMENT	OVERALL PO-01 ATTAINMENT
EET-001.1	3	1.00	1.00	1.00	0.79
EET-001.2	2	1.30	0.87	0.87	
EET-001.3	2	1.00	0.67	0.67	
EET-001.4	3	1.00	1.00	1.00	
EET-001.5	1	1.30	0.43	0.43	

PO-02

CO#	(COn-PO2)Map Value (B)	CO Atm Value (C)	(B/3)* C	CO-WISE PO-02 ATTAINMENT	OVERALL PO-02 ATTAINMENT
EET-001.1	1	1.00	0.33	0.33	0.55
EET-001.2	2	1.30	0.87	0.87	
EET-001.3	1	1.00	0.33	0.33	
EET-001.4	1	1.00	0.33	0.33	
EET-001.5	2	1.30	0.87	0.87	

PO-03

CO#	(COn-PO3)Map Value (B)	CO Atm Value (C)	(B/3)* C	CO-WISE PO-03 ATTAINMENT	OVERALL PO-03 ATTAINMENT
EET-001.1	0	1.00	0.00	0.00	
EET-001.2	0	1.30	0.00	0.00	
EET-001.3	0	1.00	0.00	0.00	
EET-001.4	0	1.00	0.00	0.00	
EET-001.5	0	1.30	0.00	0.00	

PO-04

CO#	(COn-PO4)Map Value (B)	CO Atm Value (C)	(B/3)* C	CO-WISE PO-04 ATTAINMENT	OVERALL PO-04ATTAINMENT
EET-001.1	0	1.00	0.00	0.00	0.07
EET-001.2	0	1.30	0.00	0.00	
EET-001.3	0	1.00	0.00	0.00	
EET-001.4	1	1.00	0.33	0.33	
EET-001.5	0	1.30	0.00	0.00	

PO-05

CO#	(COn-PO5)Map Value (B)	CO Atm Value (C)	(B/3)* C	CO-WISE PO-05 ATTAINMENT	OVERALL PO-05 ATTAINMENT
EET-001.1	1	1.00	0.33	0.33	0.39
EET-001.2	2	1.30	0.87	0.87	
EET-001.3	1	1.00	0.33	0.33	
EET-001.4	0	1.00	0.00	0.00	
EET-001.5	1	1.30	0.43	0.43	

PO-06

CO#	(COn-PO6)Map Value (B)	CO Atm Value (C)	(B/3)* C	CO-WISE PO-06 ATTAINMENT	OVERALL PO-06 ATTAINMENT
EET-001.1	0	1.00	0.00	0.00	
EET-001.2	0	1.30	0.00	0.00	
EET-001.3	0	1.00	0.00	0.00	
EET-001.4	0	1.00	0.00	0.00	
EET-001.5	0	1.30	0.00	0.00	

PO-07

CO#	(COn-PO7)Map Value (B)	CO Atm Value (C)	(B/3)* C	CO-WISE PO-07 ATTAINMENT	OVERALL PO-07 ATTAINMENT
EET-001.1	0	1.00	0.00	0.00	0.17
EET-001.2	2	1.30	0.87	0.87	
EET-001.3	0	1.00	0.00	0.00	
EET-001.4	0	1.00	0.00	0.00	
EET-001.5	0	1.30	0.00	0.00	

PO-08

CO#	(COn-PO8)Map Value (B)	CO Atm Value (C)	(B/3)* C	CO-WISE PO-08 ATTAINMENT	OVERALL PO-08 ATTAINMENT
EET-001.1	0	1.00	0.00	0.00	0.07
EET-001.2	0	1.30	0.00	0.00	
EET-001.3	0	1.00	0.00	0.00	
EET-001.4	1	1.00	0.33	0.33	
EET-001.5	0	1.30	0.00	0.00	

PO-09

CO#	(COn-PO9)Map Value (B)	CO Atm Value (C)	(B/3)* C	CO-WISE PO-09ATTAINMENT	OVERALL PO-09ATTAINMENT
EET-001.1	0	1.00	0.00	0.00	
EET-001.2	0	1.30	0.00	0.00	
EET-001.3	0	1.00	0.00	0.00	
EET-001.4	0	1.00	0.00	0.00	
EET-001.5	0	1.30	0.00	0.00	

PO-10

CO#	(COn-PO10)Map Value (B)	CO Atm Value (C)	(B/3)* C	CO-WISE PO-10 ATTAINMENT	OVERALL PO-10 ATTAINMENT
EET-001.1	1	1.00	0.33	0.33	0.13
EET-001.2	0	1.30	0.00	0.00	
EET-001.3	1	1.00	0.33	0.33	
EET-001.4	0	1.00	0.00	0.00	
EET-001.5	0	1.30	0.00	0.00	

PO-11

CO#	(COn-PO11)Map Value (B)	CO Atm Value (C)	(B/3)* C	CO-WISE PO-11 ATTAINMENT	OVERALL PO-11 ATTAINMENT
EET-001.1	0	1.00	0.00	0.00	
EET-001.2	0	1.30	0.00	0.00	
EET-001.3	0	1.00	0.00	0.00	
EET-001.4	0	1.00	0.00	0.00	
EET-001.5	0	1.30	0.00	0.00	

PO-12

CO#	(COn-PO12)Map Value (B)	CO Atm Value (C)	(B/3)* C	CO-WISE PO-12 ATTAINMENT	OVERALL PO-12 ATTAINMENT
EET-001.1	0	1.00	0.00	0.00	
EET-001.2	0	1.30	0.00	0.00	
EET-001.3	0	1.00	0.00	0.00	
EET-001.4	0	1.00	0.00	0.00	
EET-001.5	0	1.30	0.00	0.00	

PSO-01

CO#	(COn-PSO1)Map Value (B)	CO Atm Value (C)	(B/3)* C	CO-WISE PSO-01 ATTAINMENT	OVERALL PSO-01 ATTAINMENT
EET-001.1	0	1.00	0.00	0.00	
EET-001.2	0	1.30	0.00	0.00	
EET-001.3	0	1.00	0.00	0.00	
EET-001.4	0	1.00	0.00	0.00	
EET-001.5	0	1.30	0.00	0.00	

PSO-02

CO#	(COn-PSO2)Map Value (B)	CO Atm Value (C)	(B/3)* C	CO-WISE PSO-02ATTAINMENT	OVERALL PSO-02ATTAINMENT
EET-001.1	0	1.00	0.00	0.00	
EET-001.2	0	1.30	0.00	0.00	
EET-001.3	0	1.00	0.00	0.00	
EET-001.4	0	1.00	0.00	0.00	
EET-001.5	0	1.30	0.00	0.00	

PSO-03

CO#	(COn-PSO3)Map Value (B)	CO Atm Value (C)	(B/3)* C	CO-WISE PSO-03ATTAINMENT	OVERALL PSO-03ATTAINMENT
EET-001.1		1.00	0.00	0.00	
EET-001.2		1.30	0.00	0.00	
EET-001.3		1.00	0.00	0.00	
EET-001.4		1.00	0.00	0.00	
EET-001.5		1.30	0.00	0.00	

PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
0.79	0.55		0.07	0.39		0.17	0.07		0.131					

CO-PO AND CO-PSO ATTAINMENT

CO#	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
EET-001.1	1.0	0.3			0.3										
EET-001.2	0.9	0.9			0.9		0.9			0.3					
EET-001.3	0.7	0.3			0.3										
EET-001.4	1.0	0.3		0.3						0.3					
EET-001.5	0.4	0.9			0.4			0.3							
WT. AVG	0.8	0.5		0.3	0.5		0.9	0.3		0.3					

Director
Tula's Institute, Dehradun

Department of Applied Sciences & Engineering
Tula's Institute, Dehradun

Sample of Vibgyor Club Activity

Ref:TI/EC/0423/03

Date:01-04-2023

NOTICE

We are pleased to announce that a cleanliness drive will be conducted at ISBT Dehradun on the 2nd of April 2023. This initiative aims to promote cleanliness and hygiene within our premises, ensuring a pleasant and healthy environment for all

As responsible members of the community, it is imperative that we take proactive steps to maintain cleanliness in our surroundings. Therefore, we invite everyone to participate in this noble endeavor and contribute towards making ISBT Dehradun a cleaner and more vibrant place.

Activities planned for the cleanliness drive include:

- Waste collection and segregation
- Cleaning of public areas such as platforms, waiting areas, and washrooms
- Painting and beautification of designated areas

The success of this initiative depends on the active participation of each one of us. Let us come together as a community and make a positive impact on our environment.

Date: 2nd April 2023
Time: 11:00 am
Venue: ISBT Dehradun

01/04/23

Head
Extension Committee

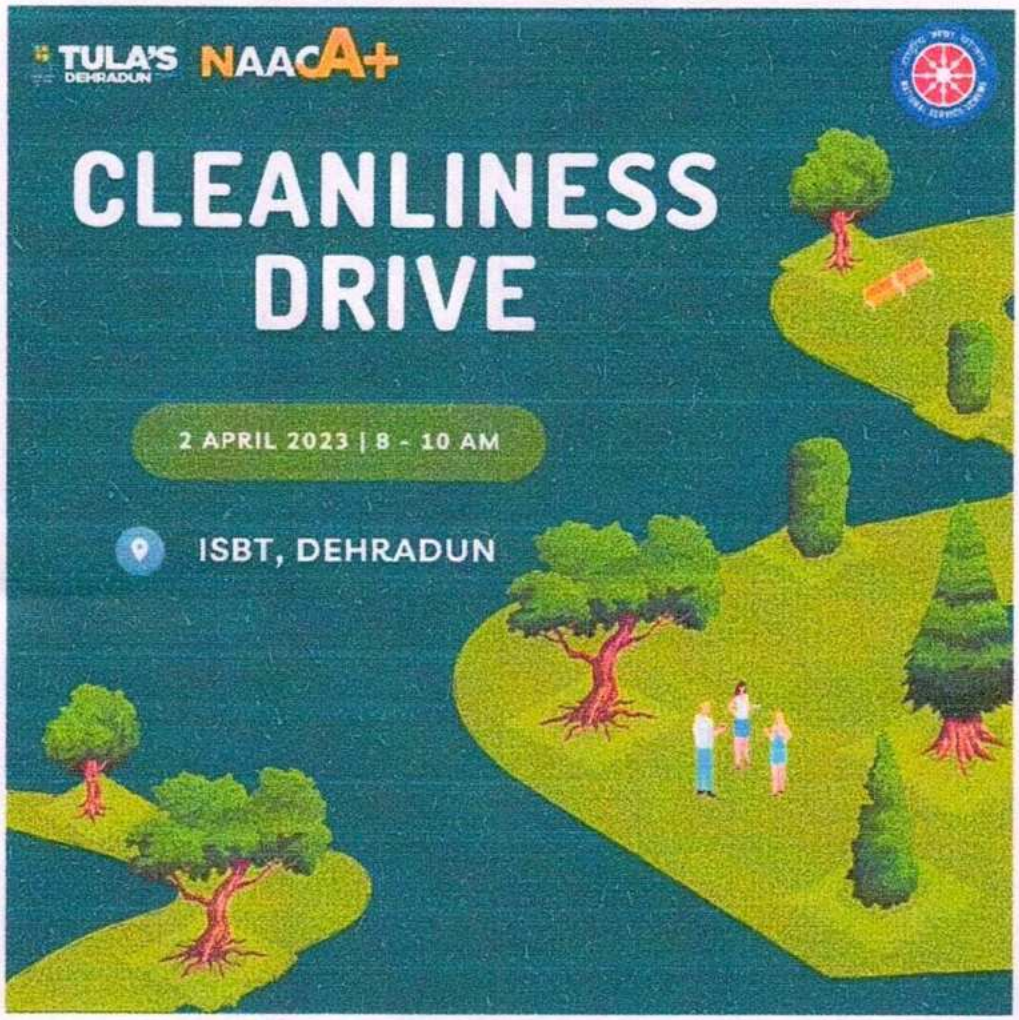
Director
Tula's Institute, Dehradun

INSTITUTION'S INNOVATION COUNCIL
IIC-Tula's Institute

TULA'S DEHRADUN | NAAC A+

Date: 02nd April 2023

'CLEANLINESS DRIVE' BY TULA'S INSTITUTE AT ISBT DEHRADUN, DEHRADUN



About Swachh Bharat Abhiyan

Cleanliness is next to Godliness. We've heard this phrase many times. But do we follow this? A lot of people don't, even though we should. However, some of us don't even respect the people who clean the trash. There are a lot of cons for not maintaining cleanliness. Cleanliness should be followed by everyone. Let's find out more about it.

Director
Tula's Institute, Dehradun

Cleanliness means that there is no dirt, no dust, no stains, no bad smells. The goals of cleanliness are health, beauty, absence of offensive odor and to avoid the spreading of dirt and contaminants to oneself and others.

With the help of cleanliness, we can keep our physical and mental health clean, which will make us feel good. Cleanliness gives rise to a good character by keeping body, mind, and soul clean and peaceful. Maintaining cleanliness is the essential part of healthy living because it is the cleanliness only which helps to improve our personality by keeping clean externally and internally.

It is everybody's responsibility, and one should keep themselves and their surroundings clean and hygienic. It also brings good and positive thoughts in the mind which slows down the occurrence of diseases.

Cleanliness Drive by the student of Tula's Institute

On 2nd April 2023, a cleanliness drive was conducted at the ISBT (Inter-State Bus Terminal) in Dehradun, Uttarakhand. The drive was organized by the National Service Scheme (NSS) students of Tula's Institute in collaboration with Shri Nityanand Swami Jan Seva Samiti. The aim of the drive was to promote cleanliness and hygiene in the public transport hub, which serves thousands of commuters daily.

Over 15 students from Tula's Institute participated in the drive. They were joined by volunteers from the Jan Seva Samiti. The students were divided into groups and were provided with gloves, masks, and garbage bags. The groups were assigned different areas of the ISBT to clean up.

The students worked tirelessly for over two hours, picking up garbage. The volunteers were surprised by the amount of garbage they collected. Over 150 kg of garbage was collected during the drive. The garbage included plastic bottles, food wrappers, paper cups, and cigarette butts.

The drive not only helped in making the ISBT cleaner but also raised awareness about the importance of cleanliness and hygiene among the commuters. The students and volunteers also interacted with the commuters and educated them on the importance of disposing of garbage properly.

The event was a success and was appreciated by the local authorities and the commuters. The NSS students of Tula's Institute and the Jan Seva Samiti were congratulated for their efforts and were encouraged to conduct more such drives in the future.

In conclusion, the cleanliness drive at ISBT, Dehradun, was a successful event that helped in promoting cleanliness and hygiene in the public transport hub. The drive was conducted by NSS students of Tula's Institute in collaboration with Shri Nityanand Swami Jan Seva Samiti. The drive collected over 150 kg of garbage and raised awareness about the importance of cleanliness and hygiene among the commuters

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Objectives of the Event

The 'Cleanliness Drive' would promote the values of cleanliness, discipline and respect for the environment in the children and educate and sensitize them about the importance of cleanliness for a healthy, socially responsible, economically dynamic and progressive nation.

Outcomes of the Event

1. All the students and faculties of Tula's Institute participated in the event with great gusto.
2. Around 100 bags of garbage were collected from the venue.

List of Measures

1. Masks, Hand Sanitizers, Hand Gloves were distributed among the students and all the volunteers.
2. Recyclable bin bags were given to the students and volunteers.
3. Arrangement of refreshment was done for the students and all the volunteers

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Event Photographs

Interaction And Conversations Between Students and Faculties (02-04-23)

Students Collecting Waste Materials (02-04-23).

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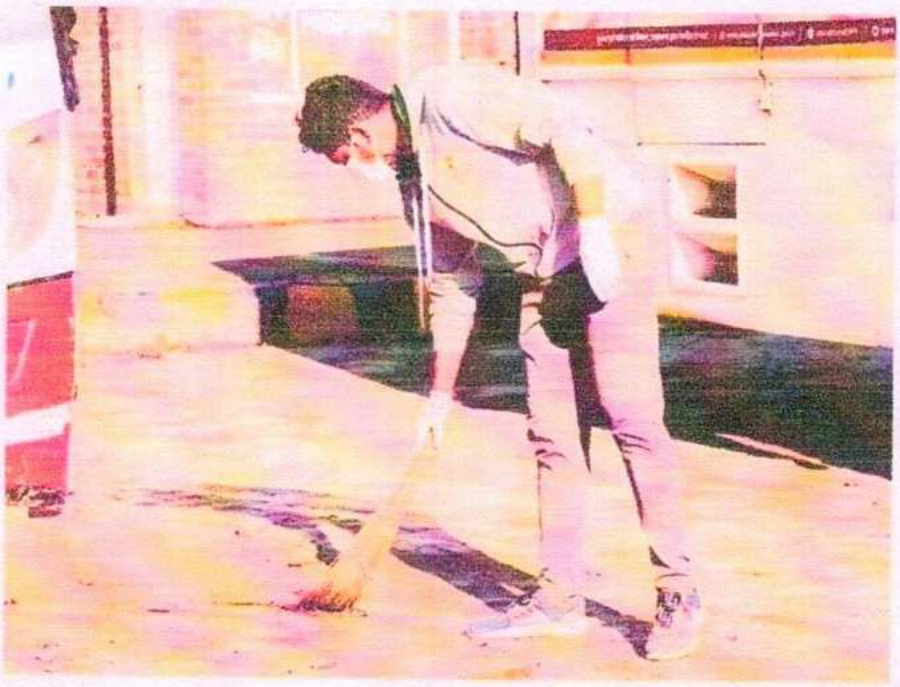
Cleanliness work going on with full Spark in students (02-04-23).



Student Cleaning the Area with a broomstick (02-04-23).

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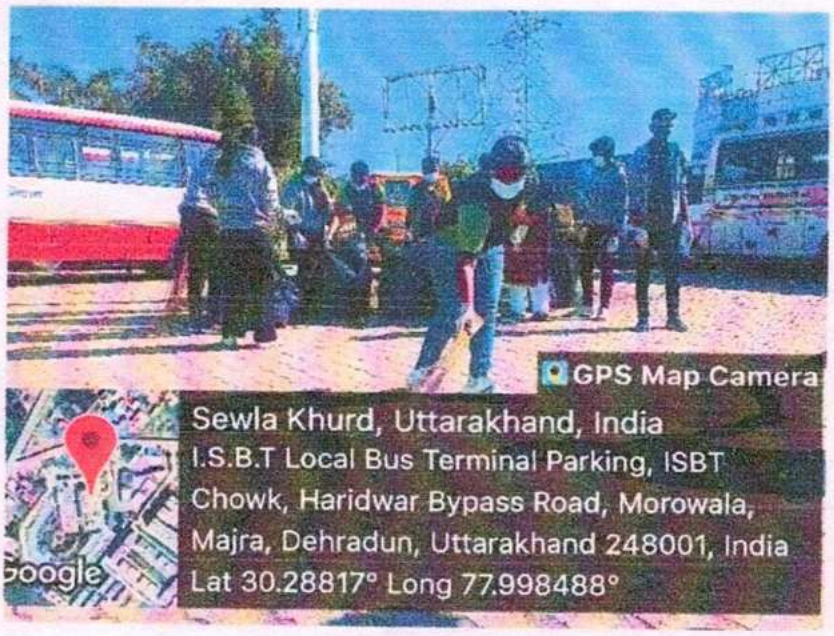
Geo Tag Photographs of the event



Garbage Collection at a particular point (02-04-23).

Photography Session of students and Faculty members (02-04-23).

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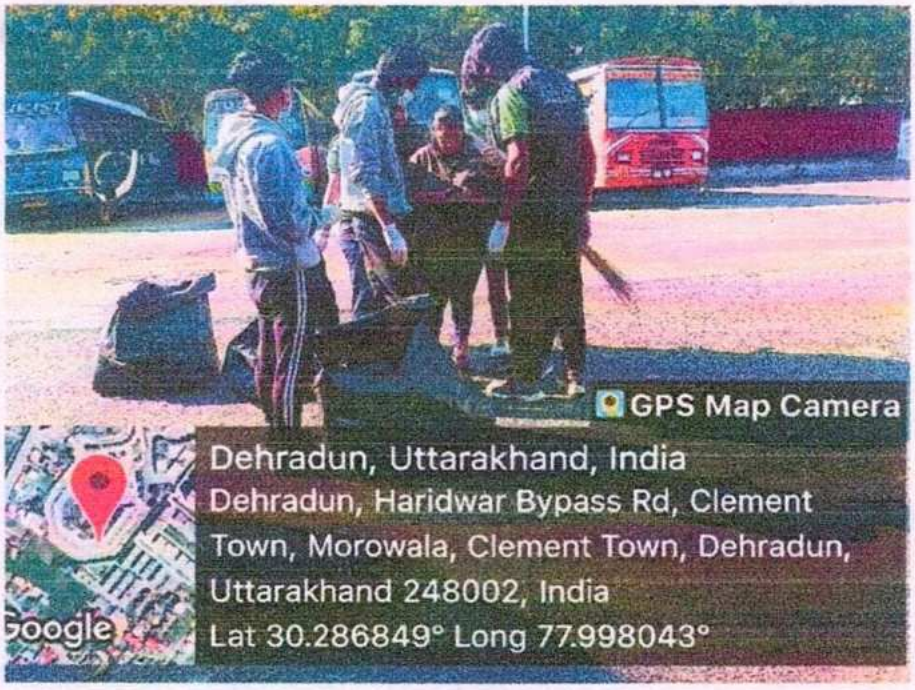
Students at ISBT Dehradun Collecting Garbage (02-04-23).



Students Gathered at a place and examined the areas (02-04-23).

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Ref:TI/EC/1022/01 Date:27-10-2022

NOTICE

The NSS unit of Tula's Institute is organizing a clothes donation drive at ISBT Dehradun on 29th October 2022, starting at 2:00 PM. This drive aims to collect clothes for the less fortunate and those in need.

We invite all students to participate in this noble cause by donating clothes in good condition. Your contributions can make a big difference in someone's life.

Contact:

Mr. Prtik Ojha

President, Student Council

Head
Extension Committee

27-10-2022

Director
Tula's Institute, Dehradun

Dhoolkot, P.O. Selaqui, Chakrata Road
Dehradun - 248011 (U.K India)
www.tulas.edu.in
0135-2699300
0135-2699309

TULA' S INSTITUTE, DEHRADUN

Date: 20th October 2022

CLOTH DONATION DRIVE

Clothes donation drive at ISBT, Dehradun

Objectives of the event

The objectives of this activity are to engage staff in a clothing collection drive to support a local charity and to raise awareness of the environmental impact of clothes.

Summary Report

Venue: Jhajhra, Dehradun

Tula's Institute, Dehradun – NSS Unit in association with Sri Nityanand Swami Jan Seva Samiti took an initiative and organized a Clothes Collection Drive at Slums of Vill. Banshiwala, Dehradun. The Drive was conducted on 20th October 2022. The purpose of this activity is to provide clothes to the needy and poor people of nearby adopted villages.

Thus totally 25 volunteers actively participated in this Drive. The students were very enthusiastic about the drive as they were happy after experiencing the cheerful and happy faces of the

Director
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children of slums. The villagers accepted all the clothes without any grudging which were distributed by NSS Volunteers.

On the whole, the drive was very fruitful for the villagers. As a result, they appeared very much positive and supportive about the programme when they witnessed sympathy and painstaking efforts for slum people. They also thanked and appreciated all the NSS Volunteers and NGO for taking the initiative in these regards and the Concern for the villagers.

Outcomes of the event

1. More than 100 underpreviledged people were benefited from the drive.
2. By donating clothes instead of throwing them away, the drive helps reduce waste and promote a more sustainable approach to clothing consumption.
3. The donated clothes can benefit individuals and families who are struggling financially, providing them with clothing items they may not be able to afford otherwise.

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EVENT PHOTOGRAPHS

Clothes donation drive at ISBT, Dehradun

Clothes donation drive at ISBT, Dehradun

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Clothes donation drive at ISBT, Dehradun

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Clothes donation drive at ISBT, Dehradun

Clothes donation drive at ISBT, Dehradun

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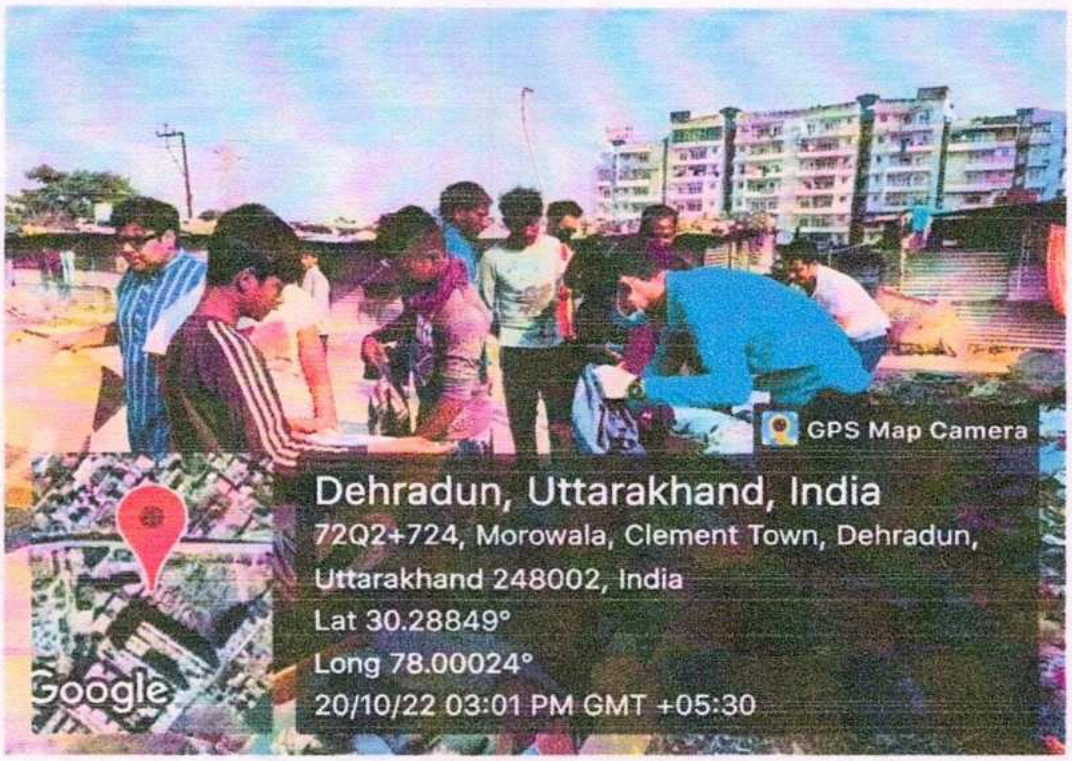
TULA' S INSTITUTE, DEHRADUN

GEO TAGGED PHOTOS



Clothes donation drive at ISBT, Dehradun

Clothes donation drive at ISBT, Dehradun

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Tula's Institute, Dehradun

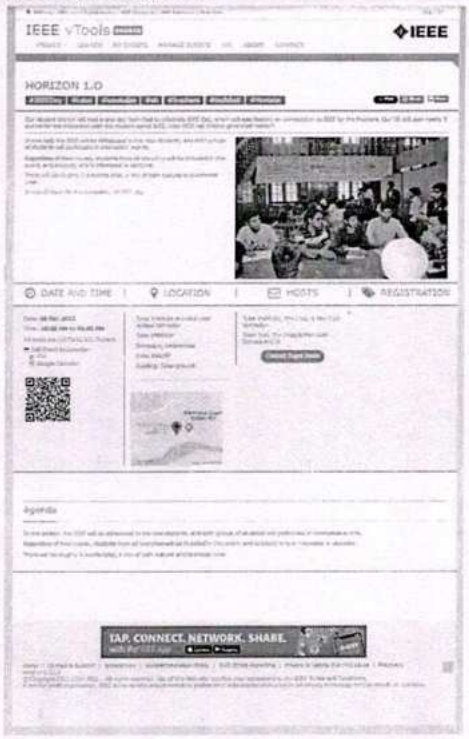
Sample of IEEE Student Chapter Activity

IEEE EVENT LIST-2022-23

1.Cloth Donation Drive
20 Oct 2022 10:30 AM

2. Technical Group discussion
14 Oct 2022 10:00 AM

3. Horizon 1.o
08 Oct 2022 10:00 AM



4.Exploring The Emerging StartUp Ecosystem in Uttarakhand
25 Feb 2023 10:00 AM

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(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

Cert No: NPTEL23CS49S53430168 To validate the certificate No. of credits recommended: 3 cr

NPTEL Online Certification

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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**

Director
Tula's Institute, Dehradun

Jul-Oct 2022

(12 week course)

Prof. Debjani Chakraborty
Coordinator, NPTEL
IIT Kharagpur

Indian Institute of Technology Kharagpur

FREE ONLINE EDUCATION swayam शिक्षित भारत, उन्नत भारत

ID No: NPTEL22CS92S63310260 To validate the certificate No. of credits recommended: 3 or 4

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**

Director
Daja's Institute, Dehradun

Jul-Oct 2022

(12 week course)

Prof. Debjani Chakraborty
Coordinator, NPTEL
IIT Kharagpur

Indian Institute of Technology Kharagpur

FREE ONLINE EDUCATION swayam

ll No: NPTEL22CS102S53310131 To validate the certificate No. of credits recommended: 3 or 4