तीर्थंकर महावीर विश्वविद्यालय
Teerthanker Mahaveer University
An Ultimate Destination for World Class Education

# COURSE FILE

## FACULTY OF ENGINEERING

### DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

| | | |
|---|---|---|
| **Program** | : | B.Tech. CSE |
| **Academic Year** | : | 2019-20 |
| **Faculty Member** | : | Mr. Pradeep Kumar Verma |
| **Faculty Email Id** | : | Pradeep.engineering@tmu.ac.in |
| **Course Name** | : | Basic Electrical Engineering |
| **Course Code** | : | EEE 217 |
| **Semester** | : | II |

Director
Faculty of Engineering
Teerthanker Mahaveer University
Moradabad.

## 1. Academic Calendar Session: 2019-20

| Activity | Odd Semester | Even Semester |
|---|---|---|
| **Commencement of Semester** | **August 01, 2019** *(All Programmes) : Two weeks induction programme for new students at the commencement* | **January 08, 2020** *(All Programmes)* |
| **Last date of depositing Semester Tuition Fee (without late fee fine)** | August 20, 2019 | January 20, 2020 |
| **Founders Day** | September 14, 2019 | - |
| **Sports Events** | College trials and teams : 17-19 October, 2019 | TMU Intercollegiate : February 10 – 21, 2020 |
| **CT-I** | September 26 - 28, 2019 | Feb 27 – 29, 2020 |
| **Diwali & Holi Break** *(for students only)* | October 28 – November 02, 2019 | March 09 – 14, 2020 |
| **CT-II** | October 25, November 04 & 05, 2019 | April 09 – 11, 2020 |
| **Last day of Submission of Examination Form** | October 19, 2019 | March 21, 2020 |
| **Last Teaching Day of Semester** | December 04, 2019 | May 06, 2020 |
| **Preparatory leave & CT - III** | December 05-07,2019 | May 07 – 09, 2020 |
| **External Examination (Theory & Practical)** | December 09 – 27, 2019 | May 11 – 30, 2020 |
| **Vacation/Education Tour/Training for students/ FDPs** | December 28, 2019 – January 07, 2020 | June 01 – July 31, 2020 |

Note:

1) Students of all the programmes are required to register themselves on or before the commencement of every semester.
2) If last date falls on a non-working day, the immediate next working day shall be treated as last date
3) Dates may change due to unavoidable circumstances.

## 2. Individual Time Table

| 3106 | 9:00 – 9:55 | 9:55– 10:50 | 10:50– 11:05 | 11:05- 11:55 | 11:55- 12:45 | 12:45- 1:45 | 1:45- 2:35 | 2:35- 3:25 | 3:25 – 4:15 |
|---|---|---|---|---|---|---|---|---|---|
| MON | | | TEA BREAK | | | LUNCH | EEE217 | | |
| TUE | | | | | | | | | |
| WED | | | | EEE217 | | | | | |
| THU | | EEE217 | | | | | | | |
| FRI | | | | | | | EEE217 | | |
| SAT | | | | | | | | | |

## 3. Syllabus

### Course Perspective:

This course provides Course covers basic passive circuit elements, dependent and independent sources, network theorems, circuit analysis techniques, Steady State Analysis of A.C. Circuits, Basics of Measuring Instruments, Single phase Transformer and Three Phase A.C. Circuits.

### Course Outcomes (COs)

| Course Outcomes: | On completion of the course, the students will be : |
|---|---|
| CO1. | Understanding the basics of Network, AC Waveform and its characteristics. |
| CO2. | Understanding the basic concept of Measuring Instruments, Transformers & three phase Power systems. |
| CO3. | Understanding the basic concepts of Transformer. |
| CO4. | Understanding the basic concept of power measurement using two wattmeter methods. |
| CO5. | Applying the concept of Kirchhoff's laws and Network Theorems to analyze complex electrical circuits. |

### Course Outline:

**Unit-1** **8 Hours**

**D.C. Network Theory:** Passive, active, bilateral, unilateral, linear, nonlinear element, Circuit theory concepts-Mesh and node analysis; Voltage and current division, source transformation, Network Theorems- Superposition theorem, Thevenin's theorem, Norton's theorem, and Maximum Power Transfer theorem, Star-delta & delta-star conversion.

**Unit-2** **8 Hours**

**Steady State Analysis of A.C. Circuits:** Sinusoidal and phasor representation of voltage and Current; Single phase A.C. circuit behavior of resistance, inductance and capacitance and their Combination in series & parallel; Power factor; Series and parallel resonance; Band width and Quality factor.

**Unit-3** **8 Hours**

**Basics of Measuring Instruments:** Introduction to voltmeter, ammeter, wattmeter & Energy meter.

**Unit-4** **8 Hours**

**Single phase Transformer:** Principle of operation; Types of construction; Phasor diagram; Equivalent circuit; Efficiency and losses.

**Unit-5** **8 Hours**

**Three Phase A.C. Circuits:** Line and phase voltage/current relations; three phase power, power measurement using two wattmeter method. Introduction to earthing and electrical safety.

### References

**T1:** V. Del Toro, Principles of Electrical Engineering, Prentice-Hall International.
**R1:** Fitzgerald A.E & Higginbotham., D.E., Basic Electrical Engineering, McGraw Hill.
**R2.** A Grabel, Basic Electrical Engineering, McGraw Hill.
**R3.** Cotton H., Advanced Electrical Technology, Wheeler Publishing.

## 4. Handouts

**Session Plan:**

| SN | Topics | Pedagogy | References | Session outcome (Bloom's Taxonomy) | Course Outcome (COs) |
|---|---|---|---|---|---|
| 1. | **UNIT-I D.C. Network Theory:** Circuit theory concepts-Mesh and node analysis | Lecture & discussion | R1 | L1,L2 | CO1, CO2 |
| 2. | Network Theorems-Superposition theorem | Lecture & discussion | R2 & R3 | L1,L2 & L4 | CO1, CO2 |
| 3. | Thevenin's theorem, | Lecture & discussion | R3 | L1,L2, L3 | CO1, CO2 |
| 4. | Norton's theorem | Lecture & discussion | R2 & R3 | L1,L2 | CO1, CO2 |
| 5. | Maximum Power Transfer | Lecture & discussion | R2 | L1,L2, L3 | CO1, CO2 |
| 6. | Star Delta transformation | Lecture discussion,& Demonstrations | R2 & R3 | L1,L3,L4 | CO1, CO2 |
| 7. | Star Delta transformation NT | Lecture & discussion | R2 & R3 | L1,L2 | CO1, CO2 |
| 8. | **Steady State Analysis of A.C. Circuits:** Sinusoidal and phasor representation of voltage and current | Lecture, discussion & Demonstration | R2 & R3 | L1,L2,L3,L6 | CO1, CO2 |
| 9. | Single phase A.C. circuit behaviour of resistance, inductance and capacitance and their combination in series & parallel | Lecture, discussion & Demonstration | R3 | L1,L6 | CO1,CO2, CO4 |
| 10. | Single phase A.C. circuit behaviour of resistance, inductance and capacitance and their combination in series & parallel | Lecture, discussion & Demonstration | R2 & R3 | L1, L2 | CO1,CO2, CO3, CO4,CO5 |
| 11. | Single phase A.C. circuit behaviour of resistance, inductance and capacitance and their combination in series & parallel | Lecture, discussion & Demonstration | R2 & R3 | L1,L3 | CO1,CO2, CO3, CO4,CO5 |
| 12. | Power factor | Lecture & discussion | R2 & R3 | L1,L2,L6 | CO2, CO3 |
| 13. | Series and parallel resonance; | Lecture, discussion & Demonstration | R2 & R3 | L1,L3,L6 | CO1, CO3 |

| | | | | | |
|---|---|---|---|---|---|
| 14. | Band width and quality factor; | Lecture, discussion & Demonstration | R2 & R3 | L1,L2,L3 | CO1, CO3 |
| 15. | Quality Factor | Lecture, discussion & Demonstration | R3 | L1,L3 | CO1, CO3 |
| 16. | **Unit-III Measuring Instruments:** Construction and principles of operation of voltage and current measuring Instruments | Lecture & discussion | R3 | L1,L2 | CO1,CO2, CO3, CO4,CO5 |
| 17. | Classification of instruments | Lecture, discussion & Demonstration | R2 | L1,L2,L5 | CO1,CO2 |
| 18. | Different type of torque. | Lecture, discussion & Demonstration | R2 & R3 | L1,L2,L3,L5 | CO1,CO2,CO3 |
| 19. | Introduction to voltmeter, | Lecture, discussion & Demonstration | R2 & R3 | L1,L2,L3,L5 | CO1,CO2,CO3 |
| 20. | Introduction ammeter, | Lecture, discussion & Demonstration | R2 & R3 | L1,L2,L3,L5 | CO1,CO3 |
| 21. | Introduction wattmeter | Lecture, discussion & Demonstration | R2 & R3 | L1,L2,L3,L5 | CO1,CO2,CO3 |
| 22. | Introduction Energy meter | Lecture, discussion & Demonstration | R2 & R3 | L1,L2,L3,L5 | CO1,CO2,CO3, CO4 |
| 23. | Construction of Energy meter | Lecture, discussion & Demonstration | R1 | L1,L2,L3,L6 | CO1,CO3,CO5 |
| 24. | **Unit-IV Single phase Transformer:** | Lecture, discussion & Demonstration | R2 & R3 | L1,L2,L3,L6 | CO1,CO2,CO3 |
| 25. | Principle of operation | Lecture, discussion & Demonstration | R2 & R3 | L1,L2,L3,L6 | CO1,CO2,CO4, CO5 |
| 26. | Types of construction | Lecture, discussion & Demonstration | R2 & R3 | L1,L2,L3,L6 | CO1,CO2,CO5 |

| | | | | | |
|---|---|---|---|---|---|
| 27. | Phasor diagram T/F | Lecture, discussion & Demonstration | R3,R4 | L1,L2,L3,L6 | CO1,CO2,CO3 |
| 28. | Equivalent circuit T/F | Lecture, discussion & Demonstration | R3,R1 | L1,L2,L3,L6 | CO1,CO4,CO4 |
| 29. | Efficiency T/F | Lecture, discussion & Demonstration | R3,R2,R6 | L1,L2,L3,L6 | CO1,CO2,CO4 |
| 30. | losses. T/F | Lecture, discussion & Demonstration | R3 | L1,L2,L3,L6 | CO1,CO4 |
| 31. | Numerical Efficiency T/F | Lecture, discussion & Demonstration | R3 | L1,L2,L3,L6 | CO1,CO3,CO4 |
| 32. | Numerical losses. T/F | Lecture, discussion & Demonstration | R3 | L1,L2,L3,L6 | CO1,CO2,CO4 |
| 33. | **Unit-V Three Phase A.C. Circuits** | Lecture, discussion | R3 | L1,L2,L3,L6 | CO1,CO3,CO4 |
| 34. | Line and phase voltage/current relations; | Lecture, discussion & Demonstration | R3 | L1,L2,L3,L6 | CO1,CO2,CO4 |
| 35. | Three phase power | Lecture, discussion | R3 | L1,L2,L3,L6 | CO1,CO2,CO5 |
| 36. | Power measurement using two wattmeter method. | Lecture, discussion | R3 | L1,L2,L3,L6 | CO1,CO2,CO5 |
| 37. | Power measurement using two wattmeter method Numerical | Lecture, discussion | R3 | L1,L2,L3,L6 | CO1,CO2,CO4 |
| 38. | Line and phase voltage/current relations; Numerical | Lecture, discussion & Demonstration | R3 | L1,L2,L3,L6 | CO1,CO2,CO3 |
| 39. | Introduction to earthing | Lecture, discussion & Demonstration | R3 | L1,L2,L3,L6 | CO1,CO2 |
| 40. | Introduction electrical safety. | Lecture, discussion & Demonstration | R3 | L1,L2,L3 | CO1,CO2,CO3 |

**L1= Remembering, L2= Understanding, L3=Applying, L4=Analyzing, L5=Evaluating, L6=Creating**

**Evaluation Scheme**

| | |
|---|---|
| **Attendance** | **20 %** |
| **Assignment** | **20%** |
| **CT1 Exam** | **20 %** |
| **CT2 Exam** | **20 %** |

**CT3 Exam** **20 %**

**Note: There is a consideration of best two CT's.**

5. Class Test (CT) Question Papers

CT-I

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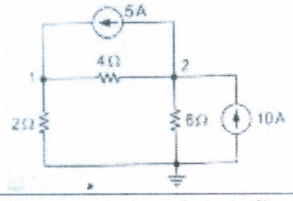
Faculty of Engineering

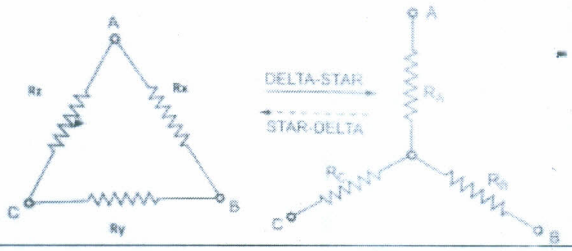
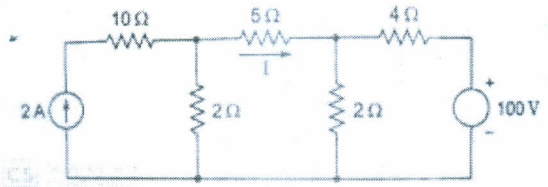
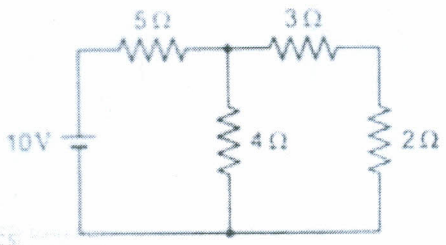
**First Internal Class Test**

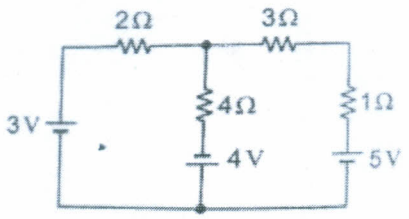
**B.Tech. (Computer Science & Engineering)**

| | | |
|---|---|---|
| Year: I | Academic Year: **2019-20** | Semester: II |
| Course Code: **EEE217** | Course Title: **Basic Electrical Engineering** | |
| Duration: **90 minutes** | | Max. Marks: **30** |

***Attempt all questions.***

| 1. | | **Answer any five questions** | **Marks** | **Unit** | **CO** | **BTL** |
|---|---|---|---|---|---|---|
| | a. | State the voltage division or current division principle for two resistors with a neat circuit diagram. | 2 | 1 | CO1 | 1 |
| | b. | Explain the following:<br>a) Active & Passive Element<br>b) Unilateral & Bilateral Element<br>c) Linear & Non-Linear Element | 2 | 1 | CO2 | 2 |
| | c. | State and explain Kirchhoff's laws with neat diagram. | 2 | 1 | CO1 | 1 |
| | d. | Explain Source transformation principle. Convert current source to voltage source.<br>  | 2 | 1 | CO2 | 1 |
| | e. | With a neat sketch briefly explain how an alternating voltage is produced when a coil is rotated in a magnetic field. | 2 | 2 | CO2 | 1 |
| | f. | Explain:<br>a) Waveform<br>b) Instantaneous value<br>c) Cycle<br>d) Time Period | 2 | 2 | CO2 | 2 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | g. | An alternating current is given by i=141.4 sin 314t. Determine maximum value, frequency, time period & instantaneous value at 3 seconds. | 2 | 2 | CO2 | 2 |
| | h. | State & Explain the Super Position Theorem with a neat circuit diagram. | 2 | 2 | CO2 | 2 |
| 2. | | Develop the relationship between any one: -<br>a) Star to Delta<br>b) Delta to Star<br>  | 10 | 2 | CO2 | 1 |
| | | OR | | | | |
| | | Applying mesh analysis, obtain the current through 5 Ω resistance in following circuit.<br>  | | 1 | CO1 | 1 |
| 3. | | What is Thevenin theorem? Determine the current in 2 Ω resistance using Thevenin theorem.<br>  | 10 | 1 | CO1 | 2 |
| | | OR | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | State the Norton's theorem. Determine the value of current flowing through 4 resistance in the given circuit by using Norton's Theorem.   | | 2 | CO2 | 2 |

CT-II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Faculty of Engineering

**Second Internal Class Test**

**B.Tech. (Computer Science & Engineering)**

| | | |
|---|---|---|
| Year: I | Academic Year: 2019-20 | Semester: II |
| Course Code: **EEE217** | Course Title: **Basic Electrical Engineering** | |
| Duration: **90 minutes** | | Max. Marks: **30** |

***Attempt all questions.***

| 1. | | **Answer any five questions** | **Marks** | **Unit** | **CO** | **BTL** |
|---|---|---|---|---|---|---|
| | a. | Explain different method to provide damping torque. | 2 | 3 | CO3 | 1 |
| | b. | Classify the instruments based on their function. | 2 | 3 | CO3 | 2 |
| | c. | What do you mean by break magnet? | 2 | 3 | CO3 | 2 |
| | d. | What is the significance of Transformer in Power systems. | 2 | 3 | CO3 | 1 |
| | e. | What is the function of transformer oil in a transformer? | 2 | 3 | CO3 | 1 |
| | f. | Why transformer is known as a static device | 2 | 3 | CO3 | 2 |
| | g. | What are the losses in a transformer? | 2 | 3 | CO3 | 2 |
| | h. | Explain the construction & principle of operation of 1□ transformer | 2 | 4 | CO4 | 3 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 2. | | Explain with a neat diagram, the constructional features and operation of PMMC type instrument | 10 | 4 | CO4 | 3 |
| | | OR | | | | |
| | | For a certain load, one wattmeter read 20 kW and the other 5 kW after the voltage circuit of the wattmeter has been reversed. Calculate the phase angle between voltage and current. | | 4 | CO4 | 5 |
| 3. | | A coil of 50□ and 0.5H is connected across 200V, 50Hz supply. Find a) Inductive reactance, b) Circuit impedance, c) Supply current, d) Power factor, e) Phase angle, f) Voltages across R. | 10 | 3 | CO3 | 6 |
| | | OR | | | | |
| | | A circuit consists of a resistance of 10ohm, capacitor 8 microfarad & Inductor 01 mH in series. Calculate resonant frequency, Voltage across R ,L & C. | | 4 | CO4 | 5 |

CT-III

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**Third Internal Class Test**

**B.Tech. (Computer Science & Engineering)**

| | | |
|---|---|---|
| Year: I | Academic Year: 2019-20 | Semester: II |
| Course Code: **EEE217** | Course Title: **Basic Electrical Engineering** | |
| Duration: **90 minutes** | | Max. Marks: **30** |

***Attempt all questions.***

| 1. | | **Answer any five questions** | **Marks** | **Unit** | **CO** | **BTL** |
|---|---|---|---|---|---|---|
| | a. | Give the voltage expressed in the symbolic form V= (10+j12) in trigonometrical & polar forms. | 2 | 5 | CO4 | 1 |
| | b. | Define energy meter briefly. | 2 | 5 | CO4 | 2 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | c. | Explain three phase power generation with help of relevant diagram & wave forms. | 2 | 5 | CO4 | 2 |
| | d. | Differentiate between star & delta connection with neat diagram. | 2 | 5 | CO4 | 1 |
| | e. | List Do's & Don'ts for electrical Safety. | 2 | 4 | CO5 | 1 |
| | f. | What is the function of transformer? | 2 | 4 | CO4 | 2 |
| | g. | Explain the two-wattmeter method to determine the power in 3 phase system with a neat circuit diagram. | 2 | 4 | CO4 | 2 |
| | h. | A balanced star -connected inductive load is connected to a 400V, 50 Hz ac supply. Two wattmeter used to measure supply power indicates 8 KW and 4 KW respectively. Determine line current & impedance per phase. | 2 | 4 | CO5 | 3 |
| 2. | | Explain the two-wattmeter method for determination of angle of three phase load with suitable diagram. $\phi = \tan^{-1}\left[\sqrt{3}\cdot\left(\frac{W_2 - W_1}{W_2 + W_1}\right)\right]$ | 10 | 4 | CO5 | 3 |
| | | OR | | | | |
| | | A balanced star connected load of (5+j9) ohm per phase is connected to a balanced 3-phase, 430 V supply. Determine phase current, power factor. | | 5 | CO4 | 5 |
| 3. | | Explain principle of operation of a single-phase transformer with a neat diagram. | 10 | | CO5 | 6 |
| | | OR | | | | |
| | | A balanced star connected load of (5+j9) ohm per phase is connected to a balanced 3-phase, 430 V supply. Determine true power & total volt-amperes. | | 5 | CO5 | 5 |

6. Award List (Internal) **Marks out of 30**

| Sr.No. | Enrollment No. | Student Name | EEE217 | | |
|---|---|---|---|---|---|
| | | | Max. Marks | | |
| | | | 30 | 30 | 30 |
| | | | CT1 | CT2 | CT3 |
| 1 | TCA1909001 | GOVIND KUMAR GUPTA | AB | 28 | 24 |
| 2 | TCA1909002 | NEHA SINGH | 28 | 27 | AB |
| 3 | TCA1909003 | SAIJAL JAIN | 26 | 28 | AB |
| 4 | TCA1909004 | AALI ABBASI | 27 | AB | 24 |
| 5 | TCA1909005 | ATISHAY JAIN | 25 | 27 | AB |
| 6 | TCA1909006 | RISHABH CHAUHAN | 24 | 25 | AB |
| 7 | TCA1909007 | ANSHIKA JAIN | 27 | 28 | AB |
| 8 | TCA1909008 | VIDHI JAIN | 26 | 24 | AB |
| 9 | TCA1909009 | SNEHA JAIN | 15 | 24 | AB |
| 10 | TCA1909010 | SHUBHAM JAIN | 27 | 26 | AB |
| 11 | TCA1909011 | ABHISHEK SINGH | 24 | 25 | AB |
| 12 | TCA1909012 | SIMRAN JAIN | 23 | 26 | AB |
| 13 | TCA1909013 | ABHISHEK SAINI | 24 | 26 | AB |
| 14 | TCA1909014 | AKSHAY VAISHAKHIYA | 26 | 28 | AB |
| 15 | TCA1909015 | TUSHAR JAIN | AB | 28 | 24 |
| 16 | TCA1909016 | KAMAL JAIN | 21 | 28 | AB |
| 17 | TCA1909017 | SILKI JAIN | 24 | 28 | AB |
| 18 | TCA1909018 | HARSH JAIN | AB | 25 | 23 |
| 19 | TCA1909019 | ZOHAIB HASAN KHAN | 27 | 26 | AB |
| 20 | TCA1909020 | PUNEET JAIN | 22 | 24 | AB |
| 21 | TCA1909021 | ARSHAN KHAN | 24 | 26 | AB |
| 22 | TCA1909022 | GARVIT JAIN | 17 | 25 | AB |
| 23 | TCA1909023 | PRATEEK JAIN | 25 | 25 | AB |
| 24 | TCA1909024 | NIKITA JAIN | AB | 24 | 23 |
| 25 | TCA1909025 | RASHI JAIN | 21 | 24 | AB |
| 26 | TCA1909026 | SUPRABH GADIA | 24 | 25 | AB |
| 27 | TCA1909027 | KANISHKA JAIN | 28 | 29 | AB |
| 28 | TCA1909028 | HIRDESH JAIN | 26 | 25 | AB |
| 29 | TCA1909029 | ANIKESH JAIN | AB | 28 | 24 |
| 30 | TCA1909030 | AMAN JAIN | 28 | 27 | AB |
| 31 | TCA1909031 | ADITI JAIN | 26 | 28 | AB |
| 32 | TCA1909032 | DHAWAL JAIN | 27 | AB | 24 |
| 33 | TCA1909033 | HARSHIT JAIN | 25 | 27 | AB |
| 34 | TCA1909034 | RITESH JAIN | 24 | 25 | AB |
| 35 | TCA1909035 | SHASHANK GANGWAR | 27 | 28 | AB |

| | | | | | |
|---|---|---|---|---|---|
| 36 | TCA1909036 | SHUBHAM SAINI | 26 | 24 | AB |
| 37 | TCA1909037 | ATAUL MUSTAFA | 15 | 24 | AB |
| 38 | TCA1909038 | ARYAN JAIN | 27 | 26 | AB |
| 39 | TCA1909039 | SHUBH SAXENA | 24 | 25 | AB |
| 40 | TCA1909040 | SANJEEV VASU | 23 | 26 | AB |
| 41 | TCA1909041 | PIYUSH JAIN | 24 | 26 | AB |
| 42 | TCA1909042 | SUCHITA JAIN | 26 | 28 | AB |
| 43 | TCA1909043 | HARSHIT UPADHYAY | AB | 28 | 24 |
| 44 | TCA1909044 | SONAM JAIN | 21 | 28 | AB |
| 45 | TCA1909045 | ASHI JAIN | 24 | 28 | AB |
| 46 | TCA1909046 | ATISHA JAIN | AB | 25 | 23 |
| 47 | TCA1909047 | ZEESHAN AHMAD | 27 | 26 | AB |
| 48 | TCA1909048 | APURV JAIN | 22 | 24 | AB |
| 49 | TCA1909049 | PRIYANSHU JAIN | 24 | 26 | AB |
| 50 | TCA1909050 | MATEEN RAZA KHAN | 17 | 25 | AB |
| 51 | TCA1909051 | BHARAT SINGH | 25 | 25 | AB |
| 52 | TCA1909052 | ISHITA GUPTA | AB | 24 | 23 |
| 53 | TCA1909053 | SAHIL JAIN | 21 | 24 | AB |
| 54 | TCA1909054 | YASHVEE JAIN | 24 | 25 | AB |
| 55 | TCA1909055 | SAQLAIN | 28 | 29 | AB |
| 56 | TCA1909056 | PARVEJ ALI | 26 | 25 | AB |
| 57 | TCA1909057 | ATISHAY BADKUL | 22 | 24 | AB |
| 58 | TCA1909063 | ANMOL TYAGI | 24 | 26 | AB |
| 59 | TCA1909064 | NEHA VERMA | 17 | 25 | AB |
| 60 | TCA1909065 | PRIYANSH JAIN | 22 | 24 | AB |

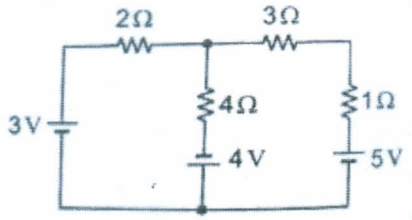
## 8. Identification of Slow Learners

| | Slow Learners After First CT | | | Criteria |
|---|---|---|---|---|
| 1 | TCA1909009 | SNEHA JAIN | 15 | |
| 2 | TCA1909022 | GARVIT JAIN | 17 | |
| 3 | TCA1909037 | ATAUL MUSTAFA | 15 | |
| 4 | TCA1909050 | MATEEN RAZA KHAN | 17 | |
| 5 | TCA1909064 | NEHA VERMA | 17 | CT1_Marks<60% |

| Slow Learners After Second CT | Criteria |
|---|---|
| NIL | CTI_Marks<60% |

## 9. Special classes with attendance sheet of slow learners with ATR after each CT

- Topics have been identified for slow learners after CT-1 as given below
  - Define energy meter briefly.
  - State the Norton's theorem. Determine the value of current flowing through 4 resistance in the given circuit by using Norton's Theorem.




- After special/remedial classes circular , classes had been taken as per below attendance sheet

| Classes for Slow Learners After First CT | | | Date/Month | | | |
|---|---|---|---|---|---|---|
| S.NO. | Enrollment No. | Name | 2/3 | 5/3 | 10/3 | 11/3 |
| 1 | TCA1909009 | SNEHA JAIN | | P | P | P |
| 2 | TCA1909022 | GARVIT JAIN | P | P | P | |
| 3 | TCA1909037 | ATAUL MUSTAFA | | P | P | P |
| 4 | TCA1909050 | MATEEN RAZA KHAN | | P | P | P |
| 5 | TCA1909064 | NEHA VERMA | P | P | P | |

- After Second CT-2 no students was below criteria

10. Assignments

तीर्थंकर महावीर विश्वविद्यालय
Teerthanker Mahaveer University
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## Faculty of Engineering

**Assignment –I**

**Program: BTECH (CSE)** | **Branch/Section:**

**Course Name: BEE** | **Course Code: EEE217**

**Semester: 2nd** | **Faculty: Mr. Pradeep Kumar Verma**

**Total Marks: 10** | **Submission Date: 10/March/2019**

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**Note:**

- **2.5 Marks Each**

**Q1.** Discuss the characteristics of parallel resonance of a circuit having R,L and C.

Q2. A series RLC circuit has R=20 ohm, L=0.005H and C = 0.2 x 10-6 F. It is fed from a100V variable frequency source. Find i) frequency at which current is maximum ii) impedance at this frequency and iii) voltage across inductance at this frequency.

Q3. A Voltage source 100V with resistance of 10 ohms and inductance 50 mH, a capacitor 50 microfarad are connected in series. Calculate the impedance when the frequency is- (i) 50HZ (ii) 500Hz (iii) the power factor at 100Hz.

Q4. Define power factor, inductive & capacitive reactance.

11. Question Bank

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# FACULTY OF ENGINEERING

| | | |
|---|---|---|
| Year: 2nd | Academic Year: **2019-20** | Semester: 6th |
| Course Code:EEE217 | Course Name: **Basic Electrical Engineering** | |
| Duration: ..... | | Max. Marks: .... |

**Q1. Short answer type questions.** **4*2=8**

a) Explain the terms Linear and Nonlinear networks.
b) Explain Independent & Dependent source.
c) What is meant by active and passive elements?
d) Explain Time invariant and Time variant Network.

**Q2. Medium answer type questions.** **3*5=15**

a) State and prove Thevenin's Theorem with example.
b) Explain Norton's theorem with example.
c) State and explain Superposition Theorem with suitable example.

**Q3. Long answer type questions.** **3*10=30**

**(a)** Define series R-L, L-C , R-L-C circuit.

**(b)** Write the characteristics of series resonance.

**(c)** A Pure resistor, a pure capacitor and a pure inductor are connected in parallel across a 50Hz supply, find the impedance of the circuit as seen by the supply.

11. Question Bank

तीर्थंकर महावीर विश्वविद्यालय
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# FACULTY OF ENGINEERING

| | | |
|---|---|---|
| Year: 2nd | Academic Year: **2019-20** | Semester: 6th |
| Course Code:EEE217 | Course Name: **Basic Electrical Engineering** | |
| Duration: ..... | | Max. Marks: .... |

**Q1. Short answer type questions.** **4*2=8**

a) Explain the terms Linear and Nonlinear networks.
b) Explain Independent & Dependent source.
c) What is meant by active and passive elements?
d) Explain Time invariant and Time variant Network.

**Q2. Medium answer type questions.** **3*5=15**

a) State and prove Thevenin's Theorem with example.
b) Explain Norton's theorem with example.
c) State and explain Superposition Theorem with suitable example.

**Q3. Long answer type questions.** **3*10=30**

**(a)** Define series R-L, L-C , R-L-C circuit.

**(b)** Write the characteristics of series resonance.

**(c)** A Pure resistor, a pure capacitor and a pure inductor are connected in parallel across a 50Hz supply, find the impedance of the circuit as seen by the supply.

## 12. Attendance Sheet (Month-wise)

**Attendance for the month of January 2021**

| Sl. No. | Enrollment No. | Date | 28 | 29 |
|---|---|---|---|---|
| | | Month | Jan | Jan |
| | | Student Name | | |
| 1 | TCA1909001 | GOVIND KUMAR GUPTA | P | P |
| 2 | TCA1909002 | NEHA SINGH | P | P |
| 3 | TCA1909003 | SAIJAL JAIN | P | P |
| 4 | TCA1909004 | AALI ABBASI | P | P |
| 5 | TCA1909005 | ATISHAY JAIN | P | P |
| 6 | TCA1909006 | RISHABH CHAUHAN | P | P |
| 7 | TCA1909007 | ANSHIKA JAIN | P | P |
| 8 | TCA1909008 | VIDHI JAIN | P | P |
| 9 | TCA1909009 | SNEHA JAIN | P | |
| 10 | TCA1909010 | SHUBHAM JAIN | P | P |
| 11 | TCA1909011 | ABHISHEK SINGH | P | P |
| 12 | TCA1909012 | SIMRAN JAIN | P | P |
| 13 | TCA1909013 | ABHISHEK SAINI | P | P |
| 14 | TCA1909014 | AKSHAY VAISHAKHIYA | P | P |
| 15 | TCA1909015 | TUSHAR JAIN | P | P |
| 16 | TCA1909016 | KAMAL JAIN | P | P |
| 17 | TCA1909017 | SILKI JAIN | | |
| 18 | TCA1909018 | HARSH JAIN | P | P |
| 19 | TCA1909019 | ZOHAIB HASAN KHAN | P | P |
| 20 | TCA1909020 | PUNEET JAIN | | |
| 21 | TCA1909021 | ARSHAN KHAN | P | P |
| 22 | TCA1909022 | GARVIT JAIN | | P |
| 23 | TCA1909023 | PRATEEK JAIN | P | P |
| 24 | TCA1909024 | NIKITA JAIN | P | P |
| 25 | TCA1909025 | RASHI JAIN | P | |
| 26 | TCA1909026 | SUPRABH GADIA | | P |
| 27 | TCA1909027 | KANISHKA JAIN | P | P |
| 28 | TCA1909028 | HIRDESH JAIN | P | P |
| 29 | TCA1909029 | ANIKESH JAIN | P | P |
| 30 | TCA1909030 | AMAN JAIN | P | P |
| 31 | TCA1909031 | ADITI JAIN | P | P |
| 32 | TCA1909032 | DHAWAL JAIN | P | P |
| 33 | TCA1909033 | HARSHIT JAIN | P | P |

| | | | | |
|---|---|---|---|---|
| 34 | TCA1909034 | RITESH JAIN | P | P |
| 35 | TCA1909035 | SHASHANK GANGWAR | P | P |
| 36 | TCA1909036 | SHUBHAM SAINI | P | P |
| 37 | TCA1909037 | ATAUL MUSTAFA | P | |
| 38 | TCA1909038 | ARYAN JAIN | P | P |
| 39 | TCA1909039 | SHUBH SAXENA | P | P |
| 40 | TCA1909040 | SANJEEV VASU | P | P |
| 41 | TCA1909041 | PIYUSH JAIN | P | P |
| 42 | TCA1909042 | SUCHITA JAIN | P | P |
| 43 | TCA1909043 | HARSHIT UPADHYAY | P | P |
| 44 | TCA1909044 | SONAM JAIN | P | P |
| 45 | TCA1909045 | ASHI JAIN | | |
| 46 | TCA1909046 | ATISHA JAIN | P | P |
| 47 | TCA1909047 | ZEESHAN AHMAD | P | P |
| 48 | TCA1909048 | APURV JAIN | | |
| 49 | TCA1909049 | PRIYANSHU JAIN | P | P |
| 50 | TCA1909050 | MATEEN RAZA KHAN | | P |
| 51 | TCA1909051 | BHARAT SINGH | P | P |
| 52 | TCA1909052 | ISHITA GUPTA | P | P |
| 53 | TCA1909053 | SAHIL JAIN | P | |
| 54 | TCA1909054 | YASHVEE JAIN | | P |
| 55 | TCA1909055 | SAQLAIN | P | P |
| 56 | TCA1909056 | PARVEJ ALI | P | P |
| 57 | TCA1909057 | ATISHAY BADKUL | P | P |
| 58 | TCA1909063 | ANMOL TYAGI | P | P |
| 59 | TCA1909064 | NEHA VERMA | | P |
| 60 | TCA1909065 | PRIYANSH JAIN | P | P |

## Attendance for the month of February 2021

| Sl. No. | Enrollment No. | Date | 1 | 4 | 5 | 8 | 11 | 12 | 19 | 22 | 25 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Month | Feb | Feb | Feb | Feb | Feb | Feb | Feb | Feb | Feb |
| | | Student Name | | | | | | | | | |
| 1 | TCA1909001 | GOVIND KUMAR GUPTA | | P | P | | P | P | | P | P |
| 2 | TCA1909002 | NEHA SINGH | P | P | P | P | P | P | | P | P |
| 3 | TCA1909003 | SAIJAL JAIN | P | P | P | P | | | P | P | P |
| 4 | TCA1909004 | AALI ABBASI | P | P | P | P | P | P | | | |
| 5 | TCA1909005 | ATISHAY JAIN | P | P | P | P | P | P | P | P | |
| 6 | TCA1909006 | RISHABH CHAUHAN | P | P | P | P | P | P | P | P | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | TCA1909007 | ANSHIKA JAIN | P | P | P | P | P | P | P | P | P |
| 8 | TCA1909008 | VIDHI JAIN | | P | | | P | P | P | | P |
| 9 | TCA1909009 | SNEHA JAIN | P | P | P | P | | | P | P | P |
| 10 | TCA1909010 | SHUBHAM JAIN | P | P | P | P | P | P | | | |
| 11 | TCA1909011 | ABHISHEK SINGH | P | P | P | P | P | P | P | P | P |
| 12 | TCA1909012 | SIMRAN JAIN | P | | P | | P | P | P | P | |
| 13 | TCA1909013 | ABHISHEK SAINI | P | P | P | P | P | P | P | P | P |
| 14 | TCA1909014 | AKSHAY VAISHAKHIYA | P | P | | P | P | P | | P | P |
| 15 | TCA1909015 | TUSHAR JAIN | P | P | P | P | P | P | P | P | P |
| 16 | TCA1909016 | KAMAL JAIN | P | P | P | P | P | P | P | P | |
| 17 | TCA1909017 | SILKI JAIN | P | P | P | P | P | P | P | P | P |
| 18 | TCA1909018 | HARSH JAIN | P | P | P | P | P | P | P | P | P |
| 19 | TCA1909019 | ZOHAIB HASAN KHAN | P | P | P | P | P | P | P | P | P |
| 20 | TCA1909020 | PUNEET JAIN | P | | P | P | P | P | P | P | P |
| 21 | TCA1909021 | ARSHAN KHAN | P | P | P | P | P | | P | P | P |
| 22 | TCA1909022 | GARVIT JAIN | P | P | P | P | P | P | P | P | P |
| 23 | TCA1909023 | PRATEEK JAIN | P | P | | | P | P | P | | |
| 24 | TCA1909024 | NIKITA JAIN | P | P | P | | P | | P | | |
| 25 | TCA1909025 | RASHI JAIN | P | P | | | | P | | P | |
| 26 | TCA1909026 | SUPRABH GADIA | P | P | | P | P | P | P | P | P |
| 27 | TCA1909027 | KANISHKA JAIN | P | P | P | P | P | P | P | P | P |
| 28 | TCA1909028 | HIRDESH JAIN | P | P | P | P | P | P | P | | P |
| 29 | TCA1909029 | ANIKESH JAIN | | P | P | | P | P | | P | P |
| 30 | TCA1909030 | AMAN JAIN | P | P | P | P | P | P | | P | P |
| 31 | TCA1909031 | ADITI JAIN | P | P | P | P | | | P | P | P |
| 32 | TCA1909032 | DHAWAL JAIN | P | P | P | P | P | P | | | |
| 33 | TCA1909033 | HARSHIT JAIN | P | P | P | P | P | P | P | P | |
| 34 | TCA1909034 | RITESH JAIN | P | P | P | P | P | P | P | P | |
| 35 | TCA1909035 | SHASHANK GANGWAR | P | P | P | P | P | P | P | P | P |
| 36 | TCA1909036 | SHUBHAM SAINI | | P | | | P | P | P | | P |
| 37 | TCA1909037 | ATAUL MUSTAFA | P | P | P | P | | | P | P | P |
| 38 | TCA1909038 | ARYAN JAIN | P | P | P | P | P | P | | | |
| 39 | TCA1909039 | SHUBH SAXENA | P | P | P | P | P | P | P | P | P |
| 40 | TCA1909040 | SANJEEV VASU | P | | P | | P | P | P | P | |
| 41 | TCA1909041 | PIYUSH JAIN | P | P | P | P | P | P | P | P | P |
| 42 | TCA1909042 | SUCHITA JAIN | P | P | | P | P | P | | P | P |
| 43 | TCA1909043 | HARSHIT UPADHYAY | P | P | P | P | P | P | P | P | P |
| 44 | TCA1909044 | SONAM JAIN | P | P | P | P | P | P | P | P | |
| 45 | TCA1909045 | ASHI JAIN | P | P | P | P | P | P | P | P | P |
| 46 | TCA1909046 | ATISHA JAIN | P | P | P | P | P | P | P | P | P |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 47 | TCA1909047 | ZEESHAN AHMAD | P | P | P | P | P | P | P | P | P |
| 48 | TCA1909048 | APURV JAIN | P | | P | P | P | P | P | P | P |
| 49 | TCA1909049 | PRIYANSHU JAIN | P | P | P | P | P | | P | P | P |
| 50 | TCA1909050 | MATEEN RAZA KHAN | P | P | P | P | P | P | P | P | P |
| 51 | TCA1909051 | BHARAT SINGH | P | P | | | P | P | P | | |
| 52 | TCA1909052 | ISHITA GUPTA | P | P | P | | P | | P | | |
| 53 | TCA1909053 | SAHIL JAIN | P | P | | | | P | | P | |
| 54 | TCA1909054 | YASHVEE JAIN | P | P | | P | P | P | P | P | P |
| 55 | TCA1909055 | SAQLAIN | P | P | P | P | P | P | P | P | P |
| 56 | TCA1909056 | PARVEJ ALI | P | P | P | P | P | P | P | | P |
| 57 | TCA1909057 | ATISHAY BADKUL | P | P | | P | P | P | P | P | P |
| 58 | TCA1909063 | ANMOL TYAGI | P | P | P | P | P | P | P | P | P |
| 59 | TCA1909064 | NEHA VERMA | P | P | P | P | P | P | P | | P |
| 60 | TCA1909065 | PRIYANSH JAIN | P | P | | P | P | P | P | P | P |

## Attendance for the month of March 2021

| Sl. No. | Enrollment No. | Date | 2 | 5 | 9 | 12 | 16 | 18 | 23 | 25 | 26 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Month | Mar | Mar | Mar | Mar | Mar | Mar | Mar | Mar | Mar |
| | | Student Name | | | | | | | | | |
| 1 | TCA1909001 | GOVIND KUMAR GUPTA | P | P | P | P | P | P | P | P | P |
| 2 | TCA1909002 | NEHA SINGH | P | | P | P | | P | P | P | P |
| 3 | TCA1909003 | SAIJAL JAIN | P | P | P | | | | P | P | P |
| 4 | TCA1909004 | AALI ABBASI | P | | P | P | | P | P | P | P |
| 5 | TCA1909005 | ATISHAY JAIN | P | P | P | | P | | | P | P |
| 6 | TCA1909006 | RISHABH CHAUHAN | P | | P | | P | P | P | | P |
| 7 | TCA1909007 | ANSHIKA JAIN | P | P | P | P | | P | P | P | P |
| 8 | TCA1909008 | VIDHI JAIN | P | P | P | P | P | | P | P | P |
| 9 | TCA1909009 | SNEHA JAIN | | P | P | P | P | | P | P | P |
| 10 | TCA1909010 | SHUBHAM JAIN | | | | | | P | P | P | P |
| 11 | TCA1909011 | ABHISHEK SINGH | P | | P | P | P | P | P | | |
| 12 | TCA1909012 | SIMRAN JAIN | P | P | P | P | P | | | P | P |
| 13 | TCA1909013 | ABHISHEK SAINI | P | P | | P | | P | P | P | |
| 14 | TCA1909014 | AKSHAY VAISHAKHIYA | P | P | P | | P | P | | P | P |
| 15 | TCA1909015 | TUSHAR JAIN | P | | P | P | P | P | P | P | |
| 16 | TCA1909016 | KAMAL JAIN | P | P | P | P | P | P | P | | |
| 17 | TCA1909017 | SILKI JAIN | P | P | P | | P | P | P | P | P |
| 18 | TCA1909018 | HARSH JAIN | P | P | P | P | P | P | P | P | |
| 19 | TCA1909019 | ZOHAIB HASAN KHAN | P | | | P | P | | | P | P |
| 20 | TCA1909020 | PUNEET JAIN | | P | | P | P | | P | P | P |
| 21 | TCA1909021 | ARSHAN KHAN | P | P | P | P | P | P | | | |
| 22 | TCA1909022 | GARVIT JAIN | P | | | | | P | | P | P |
| 23 | TCA1909023 | PRATEEK JAIN | | | | P | P | P | P | P | P |
| 24 | TCA1909024 | NIKITA JAIN | | P | P | P | P | P | P | P | P |
| 25 | TCA1909025 | RASHI JAIN | P | P | P | P | | P | P | P | P |
| 26 | TCA1909026 | SUPRABH GADIA | P | P | P | P | P | P | P | P | |
| 27 | TCA1909027 | KANISHKA JAIN | | P | P | | | | | P | P |
| 28 | TCA1909028 | HIRDESH JAIN | P | P | | P | P | P | P | | P |
| 29 | TCA1909029 | ANIKESH JAIN | P | P | P | P | P | P | P | P | P |
| 30 | TCA1909030 | AMAN JAIN | P | | P | P | | P | P | P | P |
| 31 | TCA1909031 | ADITI JAIN | P | P | P | | | | P | P | P |
| 32 | TCA1909032 | DHAWAL JAIN | P | | P | P | | P | P | P | P |
| 33 | TCA1909033 | HARSHIT JAIN | P | P | P | | P | | | P | P |
| 34 | TCA1909034 | RITESH JAIN | P | | P | | P | P | P | | P |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 35 | TCA1909035 | SHASHANK GANGWAR | P | P | P | P | | P | P | P | P |
| 36 | TCA1909036 | SHUBHAM SAINI | P | P | P | P | P | | P | P | P |
| 37 | TCA1909037 | ATAUL MUSTAFA | | P | P | P | P | | P | P | P |
| 38 | TCA1909038 | ARYAN JAIN | | | | | | P | P | P | P |
| 39 | TCA1909039 | SHUBH SAXENA | P | | P | P | P | P | P | | |
| 40 | TCA1909040 | SANJEEV VASU | P | P | P | P | P | | | P | P |
| 41 | TCA1909041 | PIYUSH JAIN | P | P | | P | | P | P | P | |
| 42 | TCA1909042 | SUCHITA JAIN | P | P | P | | P | P | | P | P |
| 43 | TCA1909043 | HARSHIT UPADHYAY | P | | P | P | P | P | P | P | |
| 44 | TCA1909044 | SONAM JAIN | P | P | P | P | P | P | P | | |
| 45 | TCA1909045 | ASHI JAIN | P | P | P | | P | P | P | P | P |
| 46 | TCA1909046 | ATISHA JAIN | P | P | P | P | P | P | P | P | |
| 47 | TCA1909047 | ZEESHAN AHMAD | P | | | P | P | | | P | P |
| 48 | TCA1909048 | APURV JAIN | | P | | P | P | | P | P | P |
| 49 | TCA1909049 | PRIYANSHU JAIN | P | P | P | P | P | P | | | |
| 50 | TCA1909050 | MATEEN RAZA KHAN | P | | | | | P | | P | P |
| 51 | TCA1909051 | BHARAT SINGH | | | | P | P | P | P | P | P |
| 52 | TCA1909052 | ISHITA GUPTA | | P | P | P | P | P | P | P | P |
| 53 | TCA1909053 | SAHIL JAIN | P | P | P | P | | P | P | P | P |
| 54 | TCA1909054 | YASHVEE JAIN | P | P | P | P | P | P | P | P | |
| 55 | TCA1909055 | SAQLAIN | | P | P | | | | | P | P |
| 56 | TCA1909056 | PARVEJ ALI | P | P | | P | P | P | P | | P |
| 57 | TCA1909057 | ATISHAY BADKUL | P | P | P | P | P | P | P | P | |
| 58 | TCA1909063 | ANMOL TYAGI | | P | P | | | | | P | P |
| 59 | TCA1909064 | NEHA VERMA | P | P | | P | P | P | P | | P |
| 60 | TCA1909065 | PRIYANSH JAIN | P | P | P | P | P | P | P | P | |

## Attendance for the month of April 2021

| Sl. No. | Enrollment No. | Date | 1 | 2 | 6 | 8 | 15 | 16 | 20 | 22 | 23 | 24 | 25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Month | Apr | Apr | Apr | Apr | Apr | Apr | Apr | Apr | Apr | Apr | Apr |
| | | Student Name | | | | | | | | | | | |
| 1 | TCA1909001 | GOVIND KUMAR GUPTA | | P | P | | | P | P | P | P | P | P |
| 2 | TCA1909002 | NEHA SINGH | P | P | P | P | P | P | P | P | P | P | P |
| 3 | TCA1909003 | SAIJAL JAIN | P | | P | P | | P | P | P | P | P | P |
| 4 | TCA1909004 | AALI ABBASI | P | P | | P | | P | P | P | P | P | P |
| 5 | TCA1909005 | ATISHAY JAIN | P | P | | P | P | P | P | P | P | P | P |
| 6 | TCA1909006 | RISHABH CHAUHAN | P | | | P | | P | P | P | | P | P |
| 7 | TCA1909007 | ANSHIKA JAIN | P | | P | P | P | P | | P | | P | P |
| 8 | TCA1909008 | VIDHI JAIN | | P | P | P | P | P | P | P | P | P | P |
| 9 | TCA1909009 | SNEHA JAIN | P | P | P | P | P | P | P | P | P | P | P |
| 10 | TCA1909010 | SHUBHAM JAIN | P | P | P | P | P | P | P | P | P | P | P |
| 11 | TCA1909011 | ABHISHEK SINGH | | P | P | P | P | P | P | P | P | P | P |
| 12 | TCA1909012 | SIMRAN JAIN | P | P | | | P | P | P | P | P | P | P |
| 13 | TCA1909013 | ABHISHEK SAINI | P | P | P | P | P | | P | | P | P | P |
| 14 | TCA1909014 | AKSHAY VAISHAKHIYA | | | P | | P | P | P | P | P | P | P |
| 15 | TCA1909015 | TUSHAR JAIN | P | P | P | P | P | P | P | P | P | P | P |
| 16 | TCA1909016 | KAMAL JAIN | P | P | P | | | P | P | P | P | P | P |
| 17 | TCA1909017 | SILKI JAIN | | P | | P | | P | P | P | P | P | P |
| 18 | TCA1909018 | HARSH JAIN | | P | P | P | P | | | | P | P | P |
| 19 | TCA1909019 | ZOHAIB HASAN KHAN | P | P | P | P | P | P | P | | P | P | P |
| 20 | TCA1909020 | PUNEET JAIN | P | P | P | | P | | P | P | P | P | P |
| 21 | TCA1909021 | ARSHAN KHAN | P | P | P | P | | | P | | P | P | P |
| 22 | TCA1909022 | GARVIT JAIN | P | P | P | P | P | P | P | P | P | P | P |
| 23 | TCA1909023 | PRATEEK JAIN | P | P | P | P | P | P | P | P | P | P | P |
| 24 | TCA1909024 | NIKITA JAIN | P | P | P | P | P | P | P | P | P | P | P |
| 25 | TCA1909025 | RASHI JAIN | P | P | P | P | P | P | P | P | P | P | P |
| 26 | TCA1909026 | SUPRABH GADIA | P | | P | | P | | P | P | | P | P |
| 27 | TCA1909027 | KANISHKA JAIN | | P | P | P | | P | P | P | P | P | P |
| 28 | TCA1909028 | HIRDESH JAIN | P | P | P | P | P | | P | P | P | P | P |
| 29 | TCA1909029 | ANIKESH JAIN | | P | P | | | P | P | P | P | P | P |
| 30 | TCA1909030 | AMAN JAIN | P | P | P | P | P | P | P | P | P | P | P |
| 31 | TCA1909031 | ADITI JAIN | P | | P | P | | P | P | P | P | P | P |
| 32 | TCA1909032 | DHAWAL JAIN | P | P | | P | | P | P | P | P | P | P |
| 33 | TCA1909033 | HARSHIT JAIN | P | P | | P | P | P | P | P | P | P | P |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 34 | TCA1909034 | RITESH JAIN | P | | | P | | P | P | P | | P | P |
| 35 | TCA1909035 | SHASHANK GANGWAR | P | | P | P | P | P | | P | | P | P |
| 36 | TCA1909036 | SHUBHAM SAINI | | P | P | P | P | P | P | P | P | P | P |
| 37 | TCA1909037 | ATAUL MUSTAFA | P | P | P | P | P | P | P | P | P | P | P |
| 38 | TCA1909038 | ARYAN JAIN | P | P | P | P | P | P | P | P | P | P | P |
| 39 | TCA1909039 | SHUBH SAXENA | | P | P | P | P | P | P | P | P | P | P |
| 40 | TCA1909040 | SANJEEV VASU | P | P | | | P | P | P | P | P | P | P |
| 41 | TCA1909041 | PIYUSH JAIN | P | P | P | P | P | | P | | P | P | P |
| 42 | TCA1909042 | SUCHITA JAIN | | | P | | P | P | P | P | P | P | P |
| 43 | TCA1909043 | HARSHIT UPADHYAY | P | P | P | P | P | P | P | P | P | P | P |
| 44 | TCA1909044 | SONAM JAIN | P | P | P | | | P | P | P | P | P | P |
| 45 | TCA1909045 | ASHI JAIN | | P | | P | | P | P | P | P | P | P |
| 46 | TCA1909046 | ATISHA JAIN | | P | P | P | P | | | | P | P | P |
| 47 | TCA1909047 | ZEESHAN AHMAD | P | P | P | P | P | P | P | | P | P | P |
| 48 | TCA1909048 | APURV JAIN | P | P | P | | P | | P | P | P | P | P |
| 49 | TCA1909049 | PRIYANSHU JAIN | P | P | P | P | | | P | | P | P | P |
| 50 | TCA1909050 | MATEEN RAZA KHAN | P | P | P | P | P | P | P | P | P | P | P |
| 51 | TCA1909051 | BHARAT SINGH | P | P | P | P | P | P | P | P | P | P | P |
| 52 | TCA1909052 | ISHITA GUPTA | P | P | P | P | P | P | P | P | P | P | P |
| 53 | TCA1909053 | SAHIL JAIN | P | P | P | P | P | P | P | P | P | P | P |
| 54 | TCA1909054 | YASHVEE JAIN | P | | P | | P | | P | P | | P | P |
| 55 | TCA1909055 | SAQLAIN | | P | P | P | | P | P | P | P | P | P |
| 56 | TCA1909056 | PARVEJ ALI | P | P | P | P | P | | P | P | P | P | P |
| 57 | TCA1909057 | ATISHAY BADKUL | | P | P | | | P | P | P | P | P | P |
| 58 | TCA1909063 | ANMOL TYAGI | P | P | P | P | P | P | P | P | P | P | P |
| 59 | TCA1909064 | NEHA VERMA | P | | P | P | | P | P | P | P | P | P |
| 60 | TCA1909065 | PRIYANSH JAIN | P | P | | P | | P | P | P | P | P | P |

13. E-contents (web links)

**E-contents links including:**

- University website subject notes link
- Personal google website link
- External Notes (public) link

e-content links required.

| EEE217 : Course Outcomes (COs) | | CO1 | | | | CO2 | | | CO3 | | | CO4 | | | CO5 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Assessments | | CT2 | CT3 | CT1 | | CT2 | CT3 | | CT2 | CT3 | | CT2 | CT3 | | CT3 | CT1 | |
| Questions | | Q1-Q20 | Q1-Q2 | Q1(a-e) | EXT | Q21-Q44 | Q3-Q17 | EXT | Q45-Q56 | Q18-Q23 | EXT | Q57-Q60 | Q24-Q29 | EXT | Q30 | Q2-Q3 | EXT |
| Max. Marks: | | 10.00 | 2.00 | 10.00 | 12.00 | 12.00 | 15.00 | 12.00 | 6.00 | 6.00 | 12.00 | 2.00 | 6.00 | 12.00 | 1.00 | 20.00 | 12.00 |
| S.No. | Name | Enrollement | | | | | | | | | | | | | | | |
| 1 | GOVIND KUMAR GUPTA | TCA1909001 | 10.00 | 2.00 | | 10.80 | 12.00 | 14.00 | 10.80 | 5.00 | 5.00 | 10.80 | 2.00 | 5.00 | 10.80 | 0.00 | | 10.80 |
| 2 | NEHA SINGH | TCA1909002 | 10.00 | 2.00 | 8.00 | 10.00 | 11.00 | 6.00 | 10.00 | 4.50 | 3.00 | 10.00 | 2.00 | 2.00 | 10.00 | 1.00 | 16.00 | 10.00 |
| 3 | SAIJAL JAIN | TCA1909003 | 8.00 | 1.00 | 7.00 | 10.80 | 9.00 | 6.00 | 10.80 | 4.00 | 5.00 | 10.80 | 1.00 | 4.00 | 10.80 | 0.00 | 18.00 | 10.80 |
| 4 | AALI ABBASI | TCA1909004 | 9.00 | 2.00 | 8.00 | 11.00 | 9.50 | 5.00 | 11.00 | 4.00 | 4.00 | 11.00 | 1.50 | 2.00 | 11.00 | 0.00 | 19.00 | 11.00 |
| 5 | ATISHAY JAIN | TCA1909005 | 10.00 | 2.00 | 8.00 | 11.20 | 12.00 | 9.00 | 11.20 | 6.00 | 3.00 | 11.20 | 2.00 | 1.00 | 11.20 | 0.00 | 17.00 | 11.20 |
| 6 | RISHABH CHAUHAN | TCA1909006 | 10.00 | | | 10.80 | 11.00 | | 10.80 | 4.00 | | 10.80 | 0.50 | | 10.80 | | 18.00 | 10.80 |
| 7 | ANSHIKA JAIN | TCA1909007 | 9.50 | 2.00 | 6.00 | 11.60 | 11.00 | 14.00 | 11.60 | 5.00 | 5.00 | 11.60 | 0.50 | 4.00 | 11.60 | 1.00 | 16.00 | 11.60 |
| 8 | VIDHI JAIN | TCA1909008 | 6.50 | 2.00 | 7.00 | 11.60 | 8.00 | 5.00 | 11.60 | 2.00 | 2.00 | 11.60 | 1.50 | 2.00 | 11.60 | 1.00 | 17.00 | 11.60 |
| 9 | SNEHA JAIN | TCA1909009 | 9.50 | 2.00 | 8.00 | 11.60 | 11.00 | 12.00 | 11.60 | 4.50 | 4.00 | 11.60 | 0.50 | 5.00 | 11.60 | 1.00 | 19.00 | 11.60 |
| 10 | SHUBHAM JAIN | TCA1909010 | 10.00 | 2.00 | 8.00 | 8.00 | 11.00 | 14.00 | 8.00 | 6.00 | 6.00 | 8.00 | 2.00 | 3.00 | 8.00 | 0.00 | 18.00 | 8.00 |
| 11 | ABHISHEK SINGH | TCA1909011 | 8.50 | 2.00 | 7.00 | 7.20 | 10.50 | 6.00 | 7.20 | 5.00 | 6.00 | 7.20 | 2.00 | 2.00 | 7.20 | 0.00 | 18.00 | 7.20 |
| 12 | SIMRAN JAIN | TCA1909012 | 9.50 | 1.00 | 8.00 | 9.00 | 11.00 | 7.00 | 9.00 | 4.50 | 2.00 | 9.00 | 2.00 | 2.00 | 9.00 | 0.00 | 19.00 | 9.00 |
| 13 | ABHISHEK SAINI | TCA1909013 | 9.50 | 1.00 | 8.00 | 10.80 | 10.50 | 7.00 | 10.80 | 4.00 | 3.00 | 10.80 | 1.50 | 2.00 | 10.80 | 0.00 | | 10.80 |
| 14 | AKSHAY VAISHAKHIYA | TCA1909014 | 10.50 | 2.00 | 8.00 | 11.00 | 12.00 | 13.00 | 11.00 | 5.50 | 6.00 | 11.00 | 2.00 | 2.00 | 11.00 | 0.00 | 19.00 | 11.00 |
| 15 | TUSHAR JAIN | TCA1909015 | 10.00 | 2.00 | 8.00 | 9.60 | 11.00 | 11.00 | 9.60 | 4.50 | 6.00 | 9.60 | 1.50 | 4.00 | 9.60 | 1.00 | 18.00 | 9.60 |
| 16 | KAMAL JAIN | TCA1909016 | 10.50 | 2.00 | 8.00 | 11.80 | 11.00 | 9.00 | 11.80 | 4.50 | 6.00 | 11.80 | 2.00 | 4.00 | 11.80 | 1.00 | 19.00 | 11.80 |
| 17 | SILKI JAIN | TCA1909017 | 10.00 | | 8.00 | 9.60 | 11.50 | | 9.60 | 5.50 | | 9.60 | 2.00 | | 9.60 | | 19.00 | 9.60 |
| 18 | HARSH JAIN | TCA1909018 | 10.00 | 2.00 | 8.00 | 9.00 | 11.00 | 13.00 | 9.00 | 5.00 | 6.00 | 9.00 | 2.00 | 5.00 | 9.00 | 1.00 | 19.00 | 9.00 |
| 19 | ZOHAIB HASAN KHAN | TCA1909019 | 10.50 | 2.00 | 7.00 | 8.20 | 11.00 | 12.00 | 8.20 | 4.50 | 5.00 | 8.20 | 2.00 | 4.00 | 8.20 | 1.00 | 18.00 | 8.20 |
| 20 | PUNEET JAIN | TCA1909020 | 8.50 | 2.00 | 2.00 | 11.60 | 10.50 | 9.00 | 11.60 | 3.00 | 4.00 | 11.60 | 1.50 | 1.00 | 11.60 | 1.00 | 17.00 | 11.60 |
| 21 | ARSHAN KHAN | TCA1909021 | 9.00 | 2.00 | | 10.00 | 10.50 | 13.00 | 10.00 | 5.00 | 6.00 | 10.00 | 2.00 | 5.00 | 10.00 | 0.00 | 19.00 | 10.00 |
| 22 | GARVIT JAIN | TCA1909022 | 10.50 | | 7.00 | 11.60 | 11.00 | | 11.60 | 5.00 | | 11.60 | 2.00 | | 11.60 | | 18.00 | 11.60 |
| 23 | PRATEEK JAIN | TCA1909023 | 10.50 | 2.00 | 7.00 | 9.20 | 11.50 | 8.00 | 9.20 | 5.00 | 5.00 | 9.20 | 2.00 | 5.00 | 9.20 | 0.00 | 17.00 | 9.20 |
| 24 | NIKITA JAIN | TCA1909024 | 10.00 | 2.00 | 9.00 | 12.00 | 11.50 | 14.00 | 12.00 | 5.00 | 5.00 | 12.00 | 2.00 | 2.00 | 12.00 | 1.00 | 19.00 | 12.00 |
| 25 | RASHI JAIN | TCA1909025 | 9.50 | 2.00 | 7.00 | 11.80 | 10.50 | 14.00 | 11.80 | 4.50 | 6.00 | 11.80 | 1.50 | 4.00 | 11.80 | 1.00 | 18.00 | 11.80 |
| 26 | SUPRABH GADIA | TCA1909026 | 10.00 | 2.00 | 8.00 | 11.80 | 11.00 | 14.00 | 11.80 | 5.00 | 6.00 | 11.80 | 2.00 | 5.00 | 11.80 | 1.00 | 19.00 | 11.80 |
| 27 | KANISHKA JAIN | TCA1909027 | 10.00 | | 9.00 | 7.60 | 11.00 | | 7.60 | 4.50 | | 7.60 | 2.00 | | 7.60 | | 19.00 | 7.60 |
| 28 | HIRDESH JAIN | TCA1909028 | 6.50 | 2.00 | 8.00 | 11.00 | 10.50 | 13.00 | 11.00 | 3.50 | 6.00 | 11.00 | 1.50 | 4.00 | 11.00 | 1.00 | 19.00 | 11.00 |
| 29 | ANIKESH JAIN | TCA1909029 | 10.50 | 2.00 | 9.00 | 8.00 | 11.50 | 9.00 | 8.00 | 5.00 | 6.00 | 8.00 | 2.00 | 3.00 | 8.00 | 0.00 | 19.00 | 8.00 |
| 30 | AMAN JAIN | TCA1909030 | 6.50 | 2.00 | 7.00 | 11.80 | 9.00 | 13.00 | 11.80 | 4.50 | 6.00 | 11.80 | 1.50 | 5.00 | 11.80 | 1.00 | 18.00 | 11.80 |
| 31 | ADITI JAIN | TCA1909031 | 10.50 | 2.00 | 7.00 | 11.60 | 10.50 | 10.00 | 11.60 | 4.50 | 4.00 | 11.60 | 1.50 | 4.00 | 11.60 | 0.00 | 18.00 | 11.60 |
| 32 | DHAWAL JAIN | TCA1909032 | 9.00 | 2.00 | | 8.80 | 10.50 | 7.00 | 8.80 | 4.00 | 2.00 | 8.80 | 2.00 | 3.00 | 8.80 | 0.00 | | 8.80 |
| 33 | HARSHIT JAIN | TCA1909033 | 9.50 | 2.00 | 8.00 | 6.80 | 9.50 | 13.00 | 6.80 | 4.50 | 6.00 | 6.80 | 2.00 | 3.00 | 6.80 | 1.00 | 19.00 | 6.80 |
| 34 | RITESH JAIN | TCA1909034 | 10.00 | 2.00 | 8.00 | 11.00 | 11.50 | 14.00 | 11.00 | 4.50 | 6.00 | 11.00 | 2.00 | 5.00 | 11.00 | 1.00 | 19.00 | 11.00 |
| 35 | SHASHANK GANGWAR | TCA1909035 | 7.00 | 2.00 | 8.00 | 8.40 | 10.50 | 8.00 | 8.40 | 3.50 | 6.00 | 8.40 | 2.00 | 3.00 | 8.40 | 0.00 | 18.00 | 8.40 |
| 36 | SHUBHAM SAINI | TCA1909036 | 8.50 | 2.00 | 9.00 | 11.40 | 11.00 | 12.00 | 11.40 | 5.00 | 6.00 | 11.40 | 2.00 | 5.00 | 11.40 | 0.00 | 19.00 | 11.40 |
| 37 | ATAUL MUSTAFA | TCA1909037 | 9.00 | 2.00 | 8.00 | 11.40 | 10.50 | 13.00 | 11.40 | 5.00 | 6.00 | 11.40 | 2.00 | 5.00 | 11.40 | 0.00 | 19.00 | 11.40 |
| 38 | ARYAN JAIN | TCA1909038 | 10.50 | 1.00 | 9.00 | 6.20 | 11.00 | 5.00 | 6.20 | 5.00 | 2.00 | 6.20 | 2.00 | 2.00 | 6.20 | 0.00 | 19.00 | 6.20 |
| 39 | SHUBH SAXENA | TCA1909039 | 8.50 | 1.00 | 8.00 | 11.60 | 10.50 | 7.00 | 11.60 | 4.00 | 1.00 | 11.60 | 1.50 | 2.00 | 11.60 | 0.00 | 18.00 | 11.60 |
| 40 | SANJEEV VASU | TCA1909040 | 4.50 | 0.00 | 6.00 | 11.40 | 2.50 | 6.00 | 11.40 | 1.00 | 2.00 | 11.40 | 0.00 | 2.00 | 11.40 | 0.00 | | 11.40 |
| 41 | PIYUSH JAIN | TCA1909041 | 8.00 | 2.00 | 9.00 | 11.60 | 10.50 | 6.00 | 11.60 | 4.50 | 5.00 | 11.60 | 1.50 | 3.00 | 11.60 | 1.00 | 19.00 | 11.60 |
| 42 | SUCHITA JAIN | TCA1909042 | 10.00 | 1.00 | 7.00 | 10.80 | 11.00 | 7.00 | 10.80 | 5.00 | 3.00 | 10.80 | 2.00 | 3.00 | 10.80 | 0.00 | 17.00 | 10.80 |
| 43 | HARSHIT UPADHYAY | TCA1909043 | 10.00 | 2.00 | 4.00 | 7.60 | 10.50 | 7.00 | 7.60 | 5.00 | 3.00 | 7.60 | 2.00 | 1.00 | 7.60 | 0.00 | 19.00 | 7.60 |
| 44 | SONAM JAIN | TCA1909044 | 10.00 | 2.00 | 8.00 | 9.00 | 11.50 | 12.00 | 9.00 | 4.50 | 5.00 | 9.00 | 2.00 | 4.00 | 9.00 | 1.00 | 19.00 | 9.00 |
| 45 | ASHI JAIN | TCA1909045 | 10.00 | 2.00 | 8.00 | 9.20 | 11.50 | 10.00 | 9.20 | 5.50 | 3.00 | 9.20 | 2.00 | 1.00 | 9.20 | 0.00 | 18.00 | 9.20 |
| 46 | ATISHA JAIN | TCA1909046 | 9.50 | 2.00 | 8.00 | 12.00 | 11.00 | 13.00 | 12.00 | 4.50 | 6.00 | 12.00 | 1.50 | 5.00 | 12.00 | 1.00 | 19.00 | 12.00 |
| 47 | ZEESHAN AHMAD | TCA1909047 | 8.00 | 1.00 | | 12.00 | 10.00 | 5.00 | 12.00 | 4.50 | 2.00 | 12.00 | 2.00 | 2.00 | 12.00 | 1.00 | | 12.00 |
| 48 | APURV JAIN | TCA1909048 | 10.50 | 2.00 | 8.00 | 11.60 | 11.50 | 9.00 | 11.60 | 5.00 | 3.00 | 11.60 | 2.00 | 5.00 | 11.60 | 0.00 | 18.00 | 11.60 |
| 49 | PRIYANSHU JAIN | TCA1909049 | 9.00 | 1.00 | | 11.00 | 10.00 | 8.00 | 11.00 | 4.50 | 0.00 | 11.00 | 0.50 | 2.00 | 11.00 | 1.00 | | 11.00 |
| 50 | MATEEN RAZA KHAN | TCA1909050 | 9.00 | 1.00 | | 9.00 | 9.00 | 7.00 | 9.00 | 4.00 | 2.00 | 9.00 | 0.50 | 3.00 | 9.00 | 1.00 | | 9.00 |
| 51 | BHARAT SINGH | TCA1909051 | 10.00 | 1.00 | | 7.20 | 11.00 | 13.00 | 7.20 | 5.00 | 5.00 | 7.20 | 0.50 | 3.00 | 7.20 | 1.00 | | 7.20 |
| 52 | ISHITA GUPTA | TCA1909052 | 10.00 | 2.00 | | 11.80 | 11.50 | 6.00 | 11.80 | 4.50 | 2.00 | 11.80 | 1.50 | 2.00 | 11.80 | 0.00 | | 11.80 |
| 53 | SAHIL JAIN | TCA1909053 | 8.50 | 2.00 | 8.00 | 8.00 | 11.00 | 13.00 | 8.00 | 5.00 | 5.00 | 8.00 | 1.00 | 4.00 | 8.00 | 1.00 | 19.00 | 8.00 |
| 54 | YASHVEE JAIN | TCA1909054 | 9.50 | 1.00 | 7.00 | 0.00 | 10.50 | 6.00 | 0.00 | 4.50 | 6.00 | 0.00 | 2.00 | 3.00 | 0.00 | 0.00 | 18.00 | 0.00 |
| 55 | SAQLAIN | TCA1909055 | 10.00 | 2.00 | 8.00 | 11.40 | 11.00 | 9.00 | 11.40 | 5.00 | 5.00 | 11.40 | 2.00 | 4.00 | 11.40 | 0.00 | 19.00 | 11.40 |

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| EEE217 : Course Outcomes (COs) | | CO1 | | | | CO2 | | | CO3 | | | CO4 | | | CO5 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Assessments | | CT2 | CT3 | CT1 | | CT2 | CT3 | | CT2 | CT3 | | CT2 | CT3 | | CT3 | CT1 | |
| Questions | | Q1-Q20 | Q1-Q2 | Q1(a-e) | EXT | Q21-Q44 | Q3-Q17 | EXT | Q45-Q56 | Q18-Q23 | EXT | Q57-Q60 | Q24-Q29 | EXT | Q30 | Q2-Q3 | EXT |
| Max. Marks: | | 10.00 | 2.00 | 10.00 | 12.00 | 12.00 | 15.00 | 12.00 | 6.00 | 6.00 | 12.00 | 2.00 | 6.00 | 12.00 | 1.00 | 20.00 | 12.00 |
| S.No. | Name | Enrollement | | | | | | | | | | | | | | | |
| 56 | PARVEJ ALI | TCA1909056 | 10.00 | 2.00 | 8.00 | 0.00 | 11.00 | 14.00 | 0.00 | 6.00 | 6.00 | 0.00 | 2.00 | 3.00 | 0.00 | 0.00 | 19.00 | 0.00 |
| 57 | ATISHAY BADKUL | TCA1909057 | 10.00 | 2.00 | 8.00 | 5.80 | 11.50 | 11.00 | 5.80 | 5.00 | 4.00 | 5.80 | 2.00 | 4.00 | 5.80 | 0.00 | 18.00 | 5.80 |
| 58 | ANMOL TYAGI | TCA1909063 | 8.50 | 2.00 | 7.00 | 8.40 | 4.50 | 11.00 | 8.40 | 2.50 | 5.00 | 8.40 | 1.50 | 2.00 | 8.40 | 1.00 | 17.00 | 8.40 |
| 59 | NEHA VERMA | TCA1909064 | 10.00 | 2.00 | 8.00 | 10.40 | 11.00 | 8.00 | 10.40 | 5.50 | 4.00 | 10.40 | 2.00 | 3.00 | 10.40 | 0.00 | 18.00 | 10.40 |
| 60 | PRIYANSH JAIN | TCA1909065 | 9.00 | 2.00 | 9.00 | 9.00 | 10.50 | 13.00 | 9.00 | 5.00 | 6.00 | 9.00 | 2.00 | 5.00 | 9.00 | 0.00 | 19.00 | 9.00 |
| | | | | | | | | | | | | | | | | | | |
| | | | 58.00 | 55.00 | 49.00 | 57.00 | 219.00 | 58.00 | 38.00 | 57.00 | 57.00 | 46.00 | 57.00 | 160.00 | 53.00 | 37.00 | 57.00 | 147.00 | 25.00 | 51.00 | 57.00 | 133.00 |
| | | | 60.00 | 56.00 | 51.00 | 60.00 | 227.00 | 60.00 | 56.00 | 60.00 | 60.00 | 56.00 | 60.00 | 176.00 | 60.00 | 56.00 | 60.00 | 176.00 | 56.00 | 51.00 | 60.00 | 167.00 |

| Threshold value | 50% |
|---|---|

| Number of students above threshold value | |
|---|---|
| students Attempted | |

| CO1 ATTAINMENT | | 96% | CO2 ATTAINMENT | | CO3 ATTAINMENT | | 91% | CO4 ATTAINMENT | | 84% | CO5 ATTAINMENT | | 71.02% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ATTAINMENT LEVEL | | 3 | ATTAINMENT LEVEL | | ATTAINMENT LEVEL | | 3 | ATTAINMENT LEVEL | | 3 | ATTAINMENT LEVEL | | 3 |

**Benchmark and Attainment**

| | | | |
|---|---|---|---|
| >=50% & <60% of Students get more than target | | | 1 |
| >=60% & <70% of Students get more than target | | | 2 |
| >=70% of Students get more than target | | | 3 |

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| Final Attainment (Direct Calculation) | Total (Internal+Assignement) | External) |
|---|---|---|
| | | |
| CO1 | 3 | 3 |
| CO2 | 3 | 3 |
| CO3 | 3 | 3 |
| CO4 | 3 | 3 |
| CO5 | 3 | **3** |
| Final Attainment (Average of all COS) | 3 | **3** |

**40%** **60%**

1.2 1.8

| Final Attainment | 3 |
|---|---|

Program Articulation Matrix:

| Course | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 | PSO3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 3 | 3 | | | | | | | | | | 1 | | | |
| CO2 | 3 | 3 | | | | | | | | | | 1 | | 1 | |
| CO3 | 3 | 3 | | | | | | | | | | 1 | | | |
| CO4 | 1 | | 3 | 2 | | | | | | | | | | 2 | |
| CO5 | | 3 | 3 | | | | | | | | | | | 2 | |
| CO6 | | | | | | | | | | | | | | | |
| Average | 2.5 | 3 | 3 | 2 | | | | | | | | 1 | | 1.66667 | |
| Course Attainment | 2.5 | 3.0 | 3.0 | 2.0 | | | | | | | | 1.0 | | 1.7 | |

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