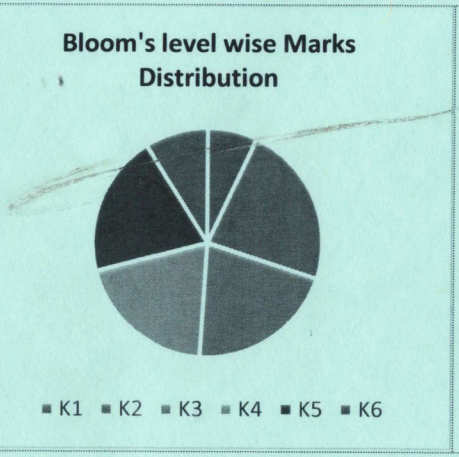
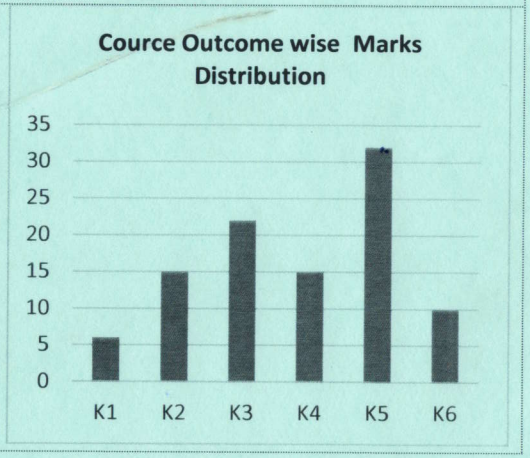
CO- Course Outcomes, **KL**- Knowledge Level, **PO** – Program Outcome

Course Outcomes	CO1	The mathematical tools needed in evaluating multiple integrals and their usage.
	CO2	The effective mathematical tools for the solutions of differential equations that model physical processes.
	CO3	The tools of differentiation and integration of functions of a complex variable that are used in various techniques dealing engineering problems
	CO4	An ability to apply effective, creative and innovative solutions, both independently and cooperatively, to current and future problems.
	CO5	A commitment to continuing learning and the capacity to maintain intellectual curiosity.
	CO6	An ability to develop statistical technique, data sampling.

GRAPHICAL REPRESENTATION





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[17-01-2026]
END SEM EXAMINATION
School of Engineering & IT

Program	**EEE /ME/CSE /AIDS(IBM)/AIML**	**Branch**	**B. Tech**
Subject Name	**Engineering Mathematics-III**	**Session**	**Odd, 2025-26**
Semester	**III**	**Year**	**Jan, 2026**

Time: 3 Hour
Max. Marks : 70

- Start writing from 2nd page onwards; **don't Write on the 1st Page Backside**
- **Answer all Questions of Section A (Compulsory)**
- **Answer Any Four out of Six of Section B**
- **Answer Any Three out of Five of Section C**
- **Possession of Mobile Phone** or any kind of **Written Material, Arguments with the Invigilator or Discussion with Co-Student** will comes under **Unfair Means** and will **Result** in the **Cancellation of the Paper(s)**.

Knowledge Level (KL)	**K1** : Remembering	**K3** : Applying	**K5** : Evaluating
	K2 : Understanding	**K4** : Analysing	**K6** : Creating

Section A (Each question Carry 02 Marks from Q1-i to x – 20 Marks)

Q. N 1	QUESTIONS	Marks	COs	KL
i	If $u_0 = 3$, $u_1 = 12$, $u_2 = 18$, $u_3 = 2000$, $u_4 = 100$, calculate Δu_0.	2	CO3	K1
ii	Write the relation between Mean, Median and Mode.	2	CO1	K2
iii	Write the Lagrange's Interpolation formula.	2	CO2	K2
iv	Write the formula for numerical differentiation.	2	CO1	K2
v	Find the variance for the data given : X: 0 1 2 3 $p(x)$: $\frac{1}{8}$ $\frac{3}{8}$ $\frac{3}{8}$ $\frac{1}{8}$	2	CO5	K1
vi	Define sample in sampling theory.	2	CO3	K5
vii	Two dice are thrown simultaneously. What is the probability of getting two numbers whose product is even?	2	CO2	K1
viii	Determine which numerical method is best suited for solving nonlinear equations with rapid convergence, and justify your choice.	2	CO1	K2

ix	Define Random Variable with an example.	2	CO3	K2
x	If the value of mode is 25.5 and median is 16.5 then find mean?	2	CO1	K3

Section B (Answer any FOUR out of SIX) – 20 Marks
(Each question Carry 05 Marks)

Q. No.	QUESTIONS	Marks	COs	KL
2	Find the real root of the equation x^3 - 4x -9= 0 using Bisection Method.	05	CO2	K5
3	A random variable X has the following probability function X: 0 1 2 3 4 5 6 7 P(x): 0 k 2k 2k 3k K^2 $2K^2$ $7K^2+k$ Find (i) value of k (ii) Evaluate P(X<6)	05	CO2	K5
4	Evaluate $\int_0^6 \frac{dx}{1+x^2}$ by Simpson's 1/3 rule.	05	CO2	K3
5	Find the value of Y when X= 10, by Lagrange's interpolation formula x: 5 6 9 11 y: 12 13 14 16	05	CO1	K3
6	Find u_9 if $u_0 = 14, u_4 = 24, u_8 = 32, u_{12} = 35, u_{16} = 40$, using Gauss forward formula	05	CO1	K4
7	Find mean and variance: x={ 1,2,3,4,5,6} ; x= no. of appears on the die X: 0 1 2 3 4 5 6 p(x): 0 $\frac{1}{6}$ $\frac{1}{6}$ $\frac{1}{6}$ $\frac{1}{6}$ $\frac{1}{6}$ $\frac{1}{6}$	05	CO2	K2

Section C (Answer any THREE out of FIVE) – 30 Marks
(Each question Carry 10 Marks)

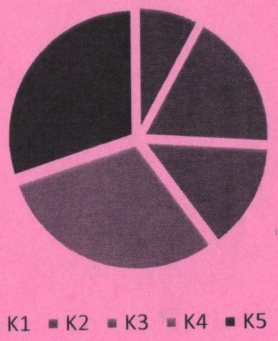
Q. No.	QUESTIONS	Marks	COs	KL
8	Evaluate $\int_0^6 x \sec x \, dx$ using 8 intervals by Trapezoidal rule.	10	CO1	K4
9	If X is a continuous random variable with the p.d.f $f(x)=\begin{cases} a(2x-x^2), & 0 \le x \le 2 \\ 0, & otherwise \end{cases}$ Find (i) a	10	CO3	K5
	(ii) p(x>1).			
10	Fit a straight line for the following data by least square method X: 1 2 3 4 6 8 Y: 2.4 3 3.6 4 5 6	10	CO6	K6
11	Find the value of y for x=0.1 by Picard's method. Given that $\frac{dy}{dx} = \frac{y-x}{y+x}$; y(0) =1.	10	CO3	K3
12	Find the real root of the equation x^3 - 3x - 5= 0 by Newtons-Raphson method	10	CO2	K5

CO- Course Outcomes, **KL**- Knowledge Level, **PO** – Program Outcome

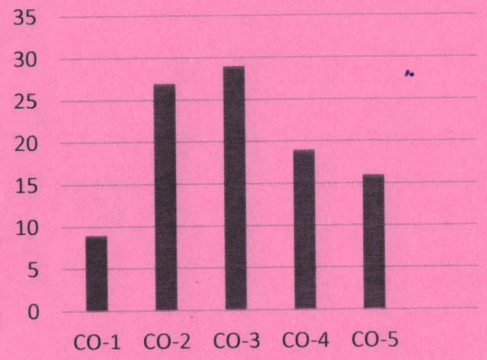
Course Outcomes	CO1	Understand the construction and operation principles of DC generators and motors.
	CO2	Analyze the characteristics and applications of various types of DC generators and motors.
	CO3	Evaluate the performance and efficiency of DC machines using different testing methods.
	CO4	Understand the construction, operation, and performance of single-phase transformers.
	CO5	Evaluate the testing methods and operation of poly-phase transformers and their various connections.

GRAPHICAL REPRESENTATION

Bloom's level wise Marks Distribution



Cource Outcome wise Marks Distribution



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[02-02-2026]
END SEM EXAMINATION
School of Engineering & IT

Program	Electrical & Electronics Engineering	Branch	B. Tech
Subject Name	Electrical Machine-I	Session	Odd, 2025-26
Semester	III	Year	Jan, 2026

Time: 3 Hour
Max. Marks : 70

- Start writing from 2nd page onwards; don't Write on the 1st Page Backside
- **Answer all Questions of Section A (Compulsory)**
- **Answer Any Four out of Six of Section B**
- **Answer Any Three out of Five of Section C**
- **Possession of Mobile Phone or any kind of Written Material, Arguments with the Invigilator or Discussion with Co-Student will comes under Unfair Means and will Result in the Cancellation of the Paper(s).**

Knowledge Level (KL)	**K1** : Remembering	**K3** : Applying	**K5** : Evaluating
	K2 : Understanding	**K4** : Analysing	**K6** : Creating

Section A (Each question Carry 02 Marks from Q1-i to x – 20 Marks)

Q. N 1	QUESTIONS	Marks	COs	KL
i	What will happen if the field of DC shunt motor disconnected under running condition.	2	CO1	K1
ii	Under what conditions sparking is produced at the brushes of a DC motor? How would you remedy it?	2	CO1	K2
iii	What are the necessity of starter?	2	CO2	K3
iv	What is the function of interpole and how are interpole winding connected?	2	CO3	K2
v	What is conditions of maximum efficiency of DC motor?	2	CO3	K1
vi	What are advantages of Swinburne's test?	2	CO4	K2
vii	What are function of brush and commutator?	2	CO4	K3
viii	Why low voltage winding are kept near the core?	2	CO5	K1
ix	The maximum flux density in the core of a 250/3000-volts, 50-Hz single-phase transformer is 1.2 Wb/m^2. If the e.m.f. per turn is 8 volt, determine (i) Primary and secondary turns.	2	CO5	K1

x	How the hysteresis and eddy current loss can be minimised?	2	CO5	K2

Section B (Answer any FOUR out of SIX) – 20 Marks
(Each question Carry 05 Marks)

Q. No.	QUESTIONS	Marks	COs	KL
2	Write down the differentiate between core type and shell type transformer	05	CO4	K4
3	Explain speed control of DC motor by flux control method.	05	CO3	K3
4	Explain different types of DC generator with equivalent circuit diagram and their output voltage equation.	05	CO1	K4
5	An 8-pole d.c. shunt generator with 778 wave-connected armature conductors and running at 500 r.p.m. supplies a load of 12.5 ohm resistance at terminal voltage of 50 V. The armature resistance is 0.24 and the field resistance is 250 ohm. Find the armature current, the induced e.m.f. and the flux per pole.	05	CO2	K2
6	Explain the construction and working of a 4 -point starter.	05	CO3	K3
7	In a brake-test, on a d.c. shunt motor, the tensions on the two sides of the brake were 2.9 kg and 0.17 kg. Radius of the pulley was 7 cm. Input current was 2 amp at 230 volts. The motor speed was 1500 rpm. Find the torque, power-output and efficiency.	05	CO3	K2

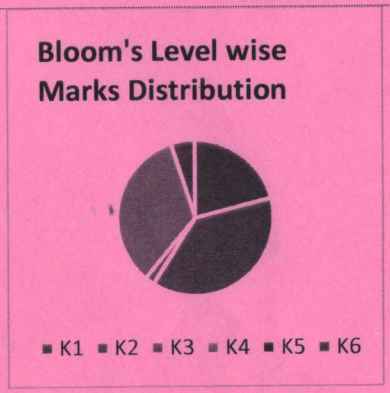
Section C (Answer any THREE out of FIVE) – 30 Marks
(Each question Carry 10 Marks)

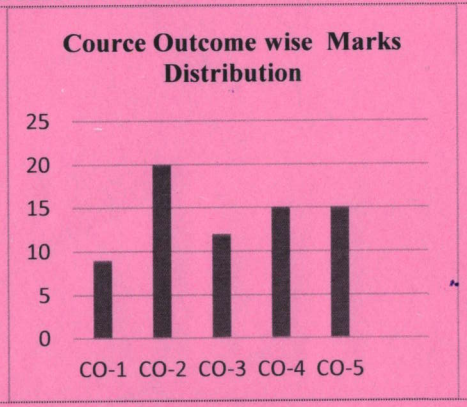
Q. No.	QUESTIONS	Marks	COs	KL
8	Explain open and short circuit test of transformer briefly.	10	CO4	K5
9	Derive the condition of maximum efficiency of DC generator.	10	CO2	K4
10	Obtain the equivalent circuit of a 200/400-V, 50 Hz. 1-phase transformer from the following test data: O.C test: 200 V 0.7A. 70 Won L.V. side S.C. test: 15 V 10A, 85W-on H.V. side Calculate the secondary voltage when delivering 5 kW at 0.8 p.f. lagging, the primary voltage being 200V.	10	CO5	K5
11	A 220 V DC shunt motor takes 20 A at rated voltage and runs at 1000 rpm. Its field circuit resistance is 100 ohm and armature circuit resistance is 0.1 ohm. Compute the value of additional resistance required in the armature circuit to reduce the speed to 800 rpm	10	CO2	K4
12	A shunt generator delivers 195 A at terminal p.d. of 250 V. The armature resistance and shunt field resistance are 0.02 ohm and 50 ohms respectively. The iron and friction losses equal 950 W. Find (a) E.M.F. generated (b) Cù losses (c) Output of the prime motor (d) Electrical, Commercial, and Mechanical efficiency	10	CO3	K5

CO- Course Outcomes, **KL**- Knowledge Level, **PO** – Program Outcome

Course Outcomes	CO1	Understand basic gender concepts and socialization processes.
	CO2	Analyze different types of gender roles and relationships.
	CO3	Evaluate the division and valuation of labour in gender contexts.
	CO4	Analyze types and consequences of gender-based violence.
	CO5	Analyze gender representation in media and culture.

GRAPHICAL REPRESENTATION





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[20-01-2026]
END SEM EXAMINATION
School of Engineering & IT

Program	**EEE / ME / CSE / AIML / AIDS**	Branch	**B. Tech**
Subject Name	**Gender Sensitization**	**Session**	**Odd, 2025-26**
Semester	**III**	**Year**	**Jan, 2026**

Time: 1.5 Hour
Max. Marks: **35**

- Start writing from 2nd page onwards; **don't Write on the 1st Page Backside**
- **Answer all Questions of Section A (Compulsory)**
- **Answer Any Five out of Six of Section B**
- **Answer Any Two out of Four of Section C**
- **Possession of Mobile Phones** or any kind of **Written Material, Arguments with the Invigilator or Discussing with Co-Student** will comes under **Unfair Means** and will **Result** in the **Cancellation of the Papers**.

Knowledge Level (KL)	**K1** : Remembering	**K3:** Applying	**K5:** Evaluating
	K2: Understanding	**K4:** Analysing	**K6:** Creating

Section A (Each question Carry 01 Marks from Q1-i to v) – 05 Marks

Q. N 1	QUESTIONS	Marks	COs	KL
i	Which document allows third gender identity on official records in India? a) Driving license b) Aadhar Card c) Passport d) All of the above	01	CO1	KL1
ii	Lack of awareness about the third gender leads to: a) Equality b) Acceptance c) Discrimination d) Empowerment	01	CO2	KL4
iii	What does gender sensitization primarily aim to achieve? a) Promote one gender over another b) Create awareness and change attitudes towards gender equality c) Encourage traditional gender roles d) Limit participation of women in workplaces.	01	CO1	KL2
iv	Media can support third gender equality by: a) Spreading myths b) Showing negative images c) Promoting positive representation	01	CO3	KL5

	d) Avoiding the topic			
v	Which area is most affected by inequality faced by the third gender? a) Entertainment b) Education and employment c) Sports d) Tourism	01	CO1	KL3

Section B (Answer any FIVE out of SIX) – 10 Marks
(Each question Carry 02 Marks)

Q. No.	QUESTIONS	Marks	COs	KL
2	Define Gender.	02	CO1	KL2
3	Stereotype means?	02	CO2	KL1
4	Which legislation in India focuses on preventing sexual harassment at the workplace?	02	CO3	KL3
5	State down the meaning of Patriarchy.	02	CO3	KL2
6	What is sexual harassment?	02	CO2	KL5
7	Mention any two **rights of women** in India.	02	CO3	KL4

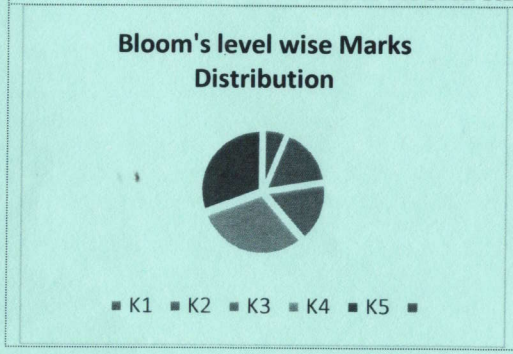
Section C (Answer any TWO out of FOUR) – 20Marks
(Each question Carry 10 Marks)

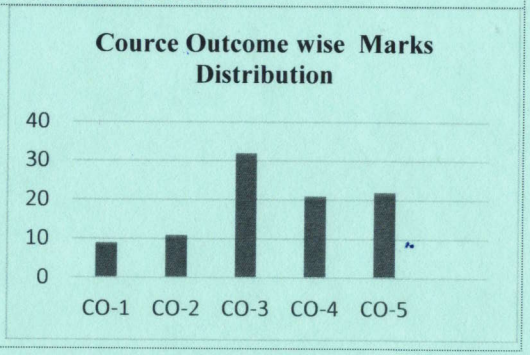
Q. No.	QUESTIONS	Marks	COs	KL
8	Briefly explain about the "Gender Sensitization".	10	CO2	KL2
9	Explain any 5 Equal rights.	10	CO1	KL5
10	Differentiate between the following: EQUALITY AND INEQUALITY	10	CO2	KL5
11	Explain in details – WOMANHOOD AND MANHOOD.	10	CO3	KL3

CO- Course Outcomes, **KL**- Knowledge Level, **PO** – Program Outcome

Course Outcomes	CO1	Understand fundamental electromagnetic laws and principles.
	CO2	Apply mathematical tools to analyze electrostatic and magnetostatic problems
	CO3	Analyze magnetic circuits and inductance.
	CO4	Evaluate electromagnetic wave propagation in different media.
	CO5	Integrate theoretical knowledge with practical applications in engineering.

GRAPHICAL REPRESENTATION





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[30-01-2026]
END SEM EXAMINATION
School of Engineering & IT

Program	**Electrical & Electronics Engineering**	**Branch**	**B. Tech**
Subject Name	**Electro Magnetic Fields Theory**	**Session**	**Odd, 2025-26**
Semester	**III**	**Year**	**Jan, 2025**

Time: 3 Hour
Max. Marks : 70

- Start writing from 2nd page onwards; **don't Write on the 1st Page Backside**
- **Answer all Questions of Section A (Compulsory)**
- **Answer Any Four out of Six of Section B**
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Knowledge Level (KL)	**K1** : Remembering	**K3** : Applying	**K5** : Evaluating
	K2 : Understanding	**K4** : Analysing	**K6** : Creating

Section A (Each question Carry 02 Marks from Q1-i to x – 20 Marks)

Q. N 1	QUESTIONS	Marks	COs	KL
i	What is meant by line, surface, and volume charge densities?	2	CO1	K1
ii	State Coulomb's law and write its mathematical expression.	2	CO1	K2
iii	What is the continuity equation? Write its differential form.	2	CO2	K3
iv	Write Poisson's and Laplace's equations	2	CO2	K2
v	State Biot–Savart law.	2	CO2	K1
vi	Write the expression for force on a moving charge in a magnetic field.	2	CO3	K2
vii	Write Maxwell's equations in integral form	2	CO4	K3
viii	What is displacement current?	2	CO4	K1
ix	What is a lossy dielectric?	2	CO4	K1
x	Write Maxwell's equations in phasor form	2	CO5	K2

Section B (Answer any FOUR out of SIX) – 20 Marks
(Each question Carry 05 Marks)

Q. No.	QUESTIONS	Marks	COs	KL
2	State and explain Ampere's circuital law and apply it to find magnetic field intensity due to a long straight current-carrying conductor.	05	CO2	K4
3	Compare between the gradient of scalar and curl of a vector. Formulate the gradient for the Cartesian, cylindrical and spherical co-ordinate system.	05	CO1	K3
4	Determine the magnetic field at the centre of the semicircular piece of wire with a radius 0.20 m. The current carried by the semicircular piece of wire is 150 A.	05	CO3	K4
5	Derive the expression for energy expended when a point charge is moving in an electric field.	05	CO3	K2
6	Discuss the mathematical relation of Maxwell's first equation (Electrostatics) with the Divergence theorem.	05	CO4	K3
7	Explain the gauss law and its applications in field theory.	05	CO1	K2

Section C (Answer any THREE out of FIVE) – 30 Marks
(Each question Carry 10 Marks)

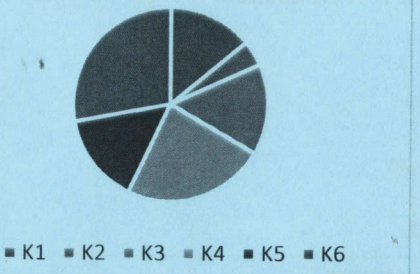
Q. No.	QUESTIONS	Marks	COs	KL
8	Derive the mathematical model of poison's equation in field theory.	10	CO4	K4
9	State and explain the Stokes theorem in magnetic field and enlist its application.	10	CO3	K4
10	The average radius of a toroid made on a ring of non-magnetic material is 0.1m, and it has 500 turns. If it carries 0.5A current, what is the magnetic field produced along its circular axis inside the toroid?	10	CO5	K5
11	Two coaxial coils are very close to each other, and their mutual inductance is 5 mH. If a current (50 A) sin 500 t is passed in one of the coils, then find the peak value of induced emf in the secondary coil.	10	CO3	K5
12	State and explain Faraday's law of electromagnetic induction with mathematical expressions.	10	CO5	K5

CO- Course Outcomes, **KL**- Knowledge Level, **PO** – Program Outcome

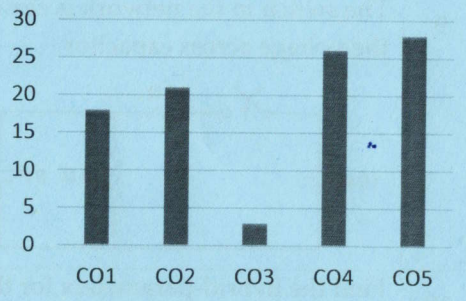
Course Outcomes	CO1	Recall basics of electrical circuits with nodal and mesh analysis.
	CO2	Illustrate electrical network theorems.
	CO3	Develop Laplace Transformed network for steady state and transient analysis.
	CO4	Analyse electrical network parameter for different application.
	CO5	Determine the elements required to network synthesis methods

GRAFICAL REPRESENTATION

Bloom's Level wise Marks Distribution



Course Outcome Wise Marks Distribution



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ARKA JAIN University Jharkhand — NAAC GRADE A — ACCREDITED UNIVERSITY

[28-01-2026]
END SEM EXAMINATION
School of Engineering & IT

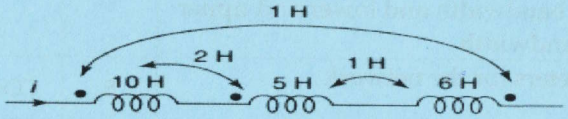
Program	**Electrical and Electronics Engineering**	**Branch**	**B. Tech**
Subject Name	**Network Theory**	**Session**	**Odd, 2025-26**
Semester	**III**	**Year**	**Jan, 2026**

Time: 3 Hour
Max. Marks : 70

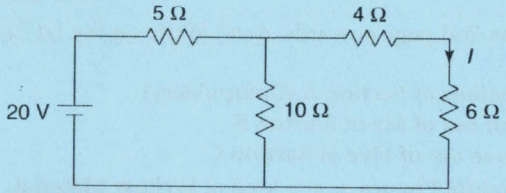
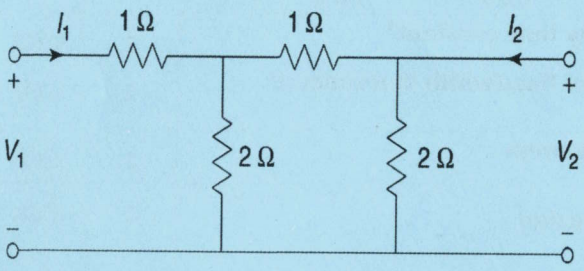
- Start writing from 2nd page onwards; **don't Write on the 1st Page Backside**
- **Answer all Questions of Section A (Compulsory)**
- **Answer Any Four out of Six of Section B**
- **Answer Any Three out of Five of Section C**
- **Possession of Mobile Phones** or any kind of **Written Material, Arguments with the Invigilator or Discussing with Co-Student** will comes under **Unfair Means** and will **Result** in the **Cancellation of the Papers**.

Knowledge Level (KL)	**K1 :** Remembering	**K3 :** Applying	**K5 :** Evaluating
	K2 : Understanding	**K4 :** Analysing	**K6 :** Creating

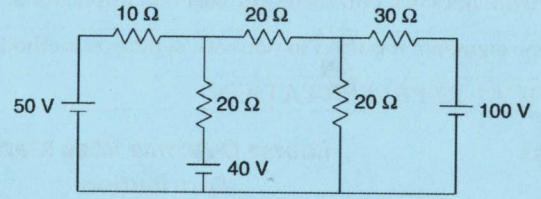
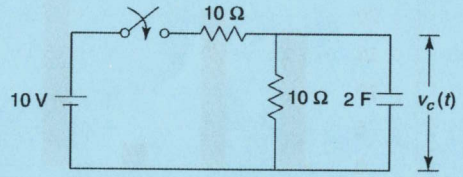
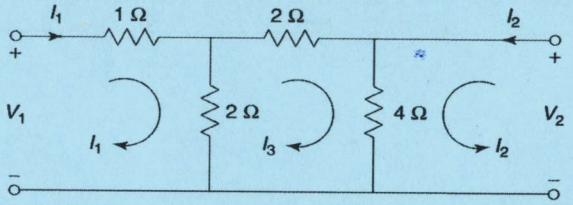
Section A (Each question Carry 02 Marks from Q1-i to Q1-xx) – 20 Marks

Q. N 1	QUESTIONS	Marks	COs	KL
i	Define superposition Theorem	2	CO3	K1
ii	Why compensation theorem is used in the circuit	2	CO3	K3
iii	Write down the reciprocal and symmetrical condition of Y parameter	2	CO2	K3
iv	What do you mean by self and mutual-inductance of a circuit	2	CO2	K1
v	Find the equivalent of the network 	2	CO5	K1
vi	What do you mean by time constant?	2	CO2	K1
vii	What do you mean by Bandwidth in resonance	2	CO1	K1
viii	Define Thevenin's theorem	2	CO5	K5
ix	Test positive real function: $\frac{s+3}{s+1}$	2	CO4	K4
x	Write-down the properties of Hurwitz polynomials	2	CO4	K6

Section B (Answer any FOUR out of SIX) – 20 Marks
(Each question Carry 5 Marks)

Q. No.	QUESTIONS	Marks	COs	KL
2	Calculate current I and verify the reciprocity theorem for the network 	5	CO3	K3
3	Two coils with coefficient of coupling of 0.6 between them are connected in series so as to magnetise in (Same direction and (b) opposite direction. The total inductance in the same direction is 1.5 H and in the opposite direction is 0.5 H. Find the self-inductance of the coils.	5	CO3	K3
4	Find the inverse Laplace transform of $\frac{s+2}{s^2(s+3)}$	5	CO5	K4
5	Check polynomial is Hurwitz or not $s^4+5s^3+5s^2+4s+10$	5	CO5	K5
6	A series RLC circuit has the following parameter values: R=10 ohm, L=0.01 H, C=100 μF. Compute the resonant frequency, bandwidth and lower and upper frequencies of the bandwidth	5	CO6	K1
7	Determine Z-parameters for the network 	5	CO4	K6

Section C (Answer any THREE out of FIVE) – 30 Marks
(Each question Carry 10 Marks)

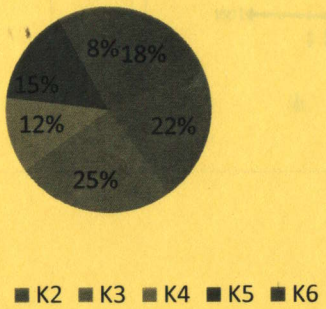
Q. No.	QUESTIONS	Marks	COs	KL
8	Find the current through 10 ohm resistor using Nortons's theorem 	10	CO3	K3
9	The switch in the network is closed at t=0. Determine the voltage across capacitor 	10	CO2	K4
10	Find the hybrid-parameters for the network 	10	CO5	K2
11	Derive the expression for inter-relationship between i. Y-parameters in terms of Z-parameters ii. Y-parameters in terms of ABCD-parameters iii. Y-parameters in terms of h-parameters	10	CO6	K3
12	Realise the network having impedance $Z(s)=\frac{6s^3+5s^2+6s+4}{2s^3+2s}$	10	CO4	K6

CO- Course Outcomes, **KL**- Knowledge Level, **PO** – Program Outcome

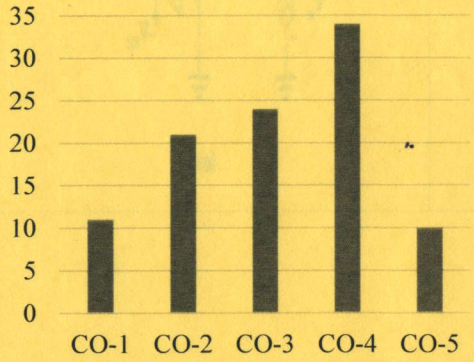
Course Outcomes	CO1	Know the characteristics, utilization of various components
	CO2	Understand the biasing techniques
	CO3	Design and analyze various rectifiers, small signal amplifier circuits.
	CO4	Design sinusoidal and non-sinusoidal oscillators.
	CO5	Designs OP-AMP based circuits with linear integrated circuits.

GRAPHICAL REPRESENTATION

Bloom's Level Wise Marks Distribution



Cource Outcome wise Marks Distribution



ARKA JAIN University Jharkhand — NAAC GRADE A ACCREDITED UNIVERSITY

[22-01-2026]
END SEM EXAMINATION
School of Engineering & IT

Program	**Electrical & Electronics Engineering**	**Branch**	**B. Tech**
Subject Name	**Analog Electronic Circuits**	**Session**	**Odd, 2025-26**
Semester	**III**	**Year**	**Jan, 2026**

Time: 3 Hour
Max. Marks : 70

- Start writing from 2nd page onwards; **don't Write on the 1st Page Backside**
- **Answer all Questions of Section A (Compulsory)**
- **Answer Any Four out of Six of Section B**
- **Answer Any Three out of Five of Section C**
- **Possession of Mobile Phone** or any kind of **Written Material, Arguments with the Invigilator or Discussion with Co-Student** will comes under **Unfair Means** and will **Result** in the **Cancellation of the Paper(s)**.

Knowledge Level (KL)	**K1** : Remembering	**K3** : Applying	**K5** : Evaluating
	K2 : Understanding	**K4** : Analysing	**K6** : Creating

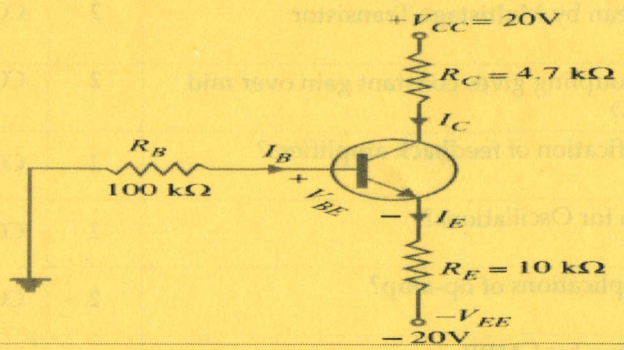
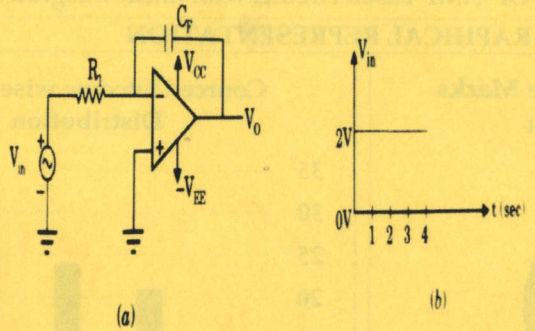
Section A (Each question Carry 02 Marks from Q1-i to x – 20 Marks)

Q. N 1	QUESTIONS	Marks	COs	KL
i	Highlight the major applications of diodes?	2	CO1	K1
ii	Establish the difference between Emitter, Base & Collector on the basis of doping level?	2	CO1	K2
iii	Write down the difference between enhancement type MOSFET and depletion type MOSFET?	2	CO2	K3
iv	Why MOSFET is a voltage controlled device?	2	CO2	K2
v	What do you mean by Multistage Transistor Amplifier?	2	CO3	K1
vi	Why does RC Coupling gives constant gain over mid frequency range?	2	CO3	K2
vii	Compute Classification of feedback amplifiers?	2	CO4	K3
viii	Write Condition for Oscillations?	2	CO4	K3
ix	What are the applications of op-amp?	2	CO5	K2
x	Give an expression for CMRR.	2	CO5	K2

Section B (Answer any FOUR out of SIX) – 20 Marks
(Each question Carry 05 Marks)

Q. No.	QUESTIONS	Marks	COs	KL
2	In a full-wave rectifier circuit with a capacitor filter, if the load current is 100 mA and the ripple frequency is 120 Hz, calculate the ripple voltage assuming a capacitor value of 1000 µF.	05	CO1	K5
3	Find an expression for base current and collector current in fixed bias.	05	CO2	K1
4	Derive an expression for trans-conductance parameter in JFET.	05	CO3	K4
5	Explain two stages RC Coupled multistage Amplifier with reference to frequency response?	05	CO3	K3
6	Explain Voltage series and Voltage shunt feedback with circuit diagram?	05	CO4	K2
7	With a circuit diagram, derive an expression for the following amplifiers: i. Differentiator ii. Integrator	05	CO5	K6

Section C (Answer any THREE out of FIVE) – 30 Marks
(Each question Carry 10 Marks)

Q. No.	QUESTIONS	Marks	COs	KL
8	For the emitter bias circuit shown in figure, find I_E, I_C,VC and V_C and V_{CE} for β=85 and V_{BE}=0.7V.  	10	CO2	K4
9	With a neat diagram explain the working of MOSFET high lighting the pinch off-condition.	10	CO2	K2
10	Draw a circuit diagram and Explain working Class B Push pull amplifier and derive expression of frequency?	10	CO3	K3
11	Analyse working Wien-bridge Oscillators with circuit diagram and derive expression for frequency response?	10	CO4	K5
12	In the circuit shown in (a)R_1C_1= 1 second, and the input is a step (dc) voltage as shown in figure (b) Deterine the output voltage and sketch it.  (a) (b)	10	CO5	K6