

VISWAJYOTHI COLLEGE OF ENGINEERING AND TECHNOLOGY (Autonomous)
FIRST SEMESTER B.TECH DEGREE EXAMINATION DECEMBER 2025 (2025 SCHEME)

Course Code: 25VJGXEST104

Course Name: INTRODUCTION TO ELECTRICAL & ELECTRONICS ENGINEERING

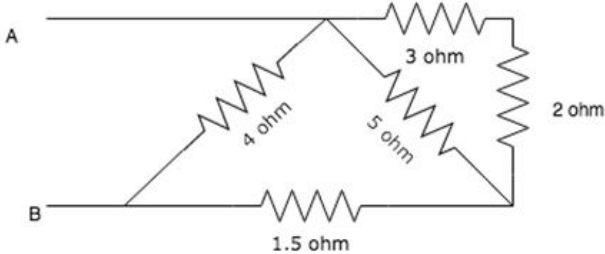
Max. Marks: 60

Duration: 2 Hours 30 Minutes

- Use separate answer sheets for Part 1 and Part 2
- No separate minimum marks are required to pass.

PART 1 - INTRODUCTION OF ELECTRICAL ENGINEERING (30 Marks)

PART 1 - A
Module (1 & 2)

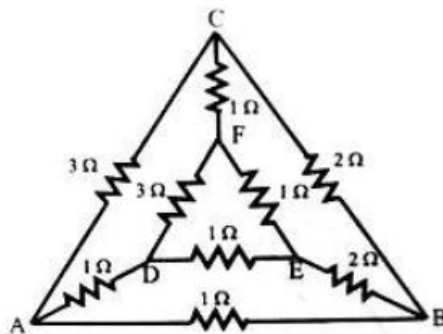
<i>Q.No.</i>	<i>Answer all questions. Each question carries 3 marks</i>	<i>CO</i>	<i>Marks</i>
1	Calculate the equivalent resistance between A and B of the given network.	CO1	3
			
2	Compare the similarities of electric and magnetic circuits with circuit diagram.	CO2	3
3	Find the trigonometrical, exponential and rectangular forms of the phasor $50 \angle 53.1^\circ$	CO1	3
4	With phasor diagram and waveform show the relation between voltage and current in a pure resistive circuit.	CO1	3

PART 1 - B
Module (1 & 2)

Answer any one full question from each module. Each question carries 9 marks

Module 1

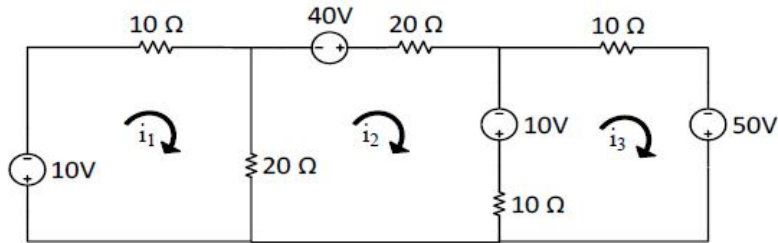
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|---|--|-----|---|
| 5 | Find the resistance between points A and B in network shown. | CO1 | 9 |
|---|--|-----|---|



6

Find the mesh currents i_1 , i_2 , i_3 in the circuit shown in figure by performing mesh analysis.

CO1



Module 2

7

A series RLC circuit with $R = 5\Omega$, $L = 0.1\text{H}$ and $C = 5\text{mF}$ is supplied from a 100V, 10Hz supply. Find the impedance, power factor, current drawn from the supply, active power, reactive power and apparent power

CO1

9

8

a. Derive the expression for statically induced emf and dynamically induced emf

CO1

5

b. Compare between AC and DC circuits.

CO1

4

PART 2 - INTRODUCTION TO ELECTRONICS ENGINEERING (30 Marks)

PART 2 - A Module (3 & 4)

<i>Q.No.</i>	<i>Answer all questions. Each question carries 3 marks</i>	<i>CO</i>	<i>Marks</i>
1	What is a FET? Draw the symbol and explain its terminals.	CO4	3
2	Derive the relation between α and β .	CO4	3
3	Write short note on smart homes.	CO6	3
4	Draw the block diagram of function generator.	CO6	3

PART 2 - B Module (3 & 4)

Answer any one full question from each module. Each question carries 9 marks

Module 3

5	a. Explain the working of a full wave bridge rectifier with capacitor filter. Illustrate your answer with appropriate circuit and waveform.	CO4	6
	b. Explain the formation of depletion region in PN junction diode.	CO4	3
6	a. Describe five-band colour coding of a resistor with an example.	CO4	3
	b. Draw and explain the frequency response of RC coupled amplifier.	CO4	6

Module 4

7	a. Illustrate and explain the block diagram of GSM.	CO5	6
	b. What information can be obtained from Lissajous figures on a CRO?	CO6	3
8	a. Explain the concept of cells in cellular communication.	CO5	3
	b. Explain the block diagram of a super heterodyne receiver.	CO5	6
