PRESIDENCY UNIVERSITY

BENGALURU

Mid - Term Examinations – October 2025

Date: 08-10-2025   **Time:** 09.30am to 11.00am

School: SOE	**Program:** B. Tech-EEE	
Course Code: EEE2500	**Course Name:** Network Theory	
Semester: III	**Max Marks**: 50	**Weightage**: 25%

CO - Levels	CO1	CO2	CO3	CO4	CO5
Marks	26	24	-	-	-

Instructions:

    (i) Read all questions carefully and answer accordingly.

    (ii) Do not write anything on the question paper other than roll number.

Part A
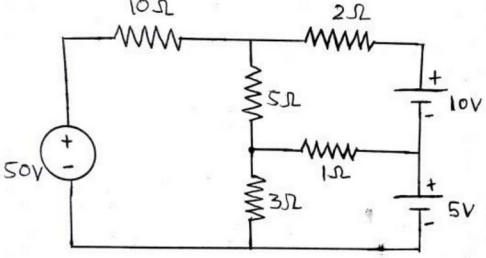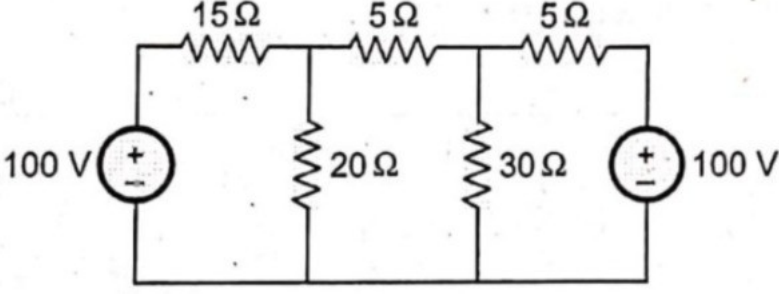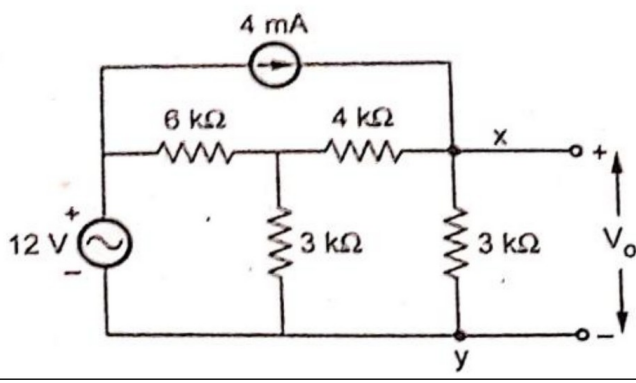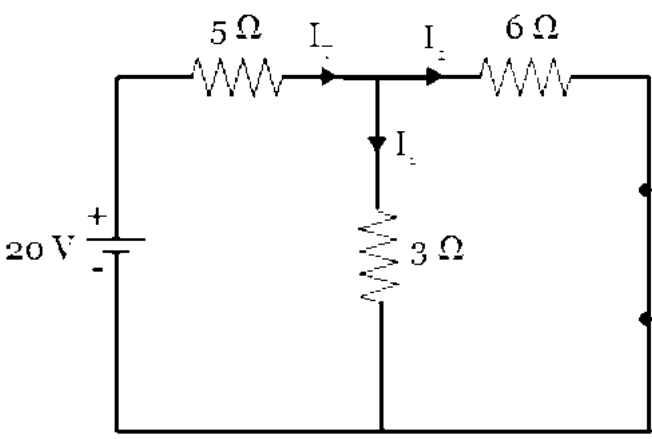
Answer ALL the Questions. Each question carries 2 marks.   **5Q x 2M=10M**

1	Define Active and Passive circuit elements. Give an example of each.	2 Marks	L3	CO1
2	What is the current in a mesh with only one loop containing a $5\,\Omega$ resistor connected to a $20\,V$ battery.	2 Marks	L3	CO1
3	A $10\,V$ voltage source is in series with a $2\,\Omega$ resistor. Transform this into an equivalent current source.	2 Marks	L3	CO1
4	State Thevenin's Theorem and mention one practical use for simplifying circuits.	2 Marks	L3	CO2
5	State the Maximum Power Transfer Theorem for DC circuits.	2 Marks	L3	CO2

Part B

6.	Compute the current passing through all the resistors for the circuit below.	20 Marks	L3	CO1
	OR			
7.	For the circuit shown below, Compute the following parameters using mesh analysis. i. Voltage across 15 Ω resistance ii. Current passing through 20 Ω resistance iii. Power delivered by 100V source iv. Power dissipated in 30 Ω resistance v. Current delivered by 100 V Source	20 Marks	L3	CO1

8.	State Thevenin's Theorem and Obtain Thevenin's equivalent network shown in fig below, between terminals X and Y. Assume a Load resistance of 5Ω across X&Y terminals and Compute power dissipated in 5Ω resistance.	20 Marks	L3	CO2

	OR			
9.	Write the statement for superposition Theorem with steps and find the current through 3 Ω resistor using superposition theorem shown in fig below.	**20 Marks**	**L3**	**CO2**

$5\,\Omega$ I_1 I_3 $6\,\Omega$

I_2

$20\,V$ $3\,\Omega$