AMBHUNATH INSTITUTE OF ENGINEERING AND TECHNOLOGY

Subject Code: BEE101 **Subject: FUNDAMENTALS OF ELECTRICAL ENGINEERING**

Course: B.Tech. **SEMESTER: I^st^**

FIRST SESSIONAL EXAMINATION, ODD SEMESTER, (2022-2023)

Time –1hr 30 min **Maximum Marks – 30**

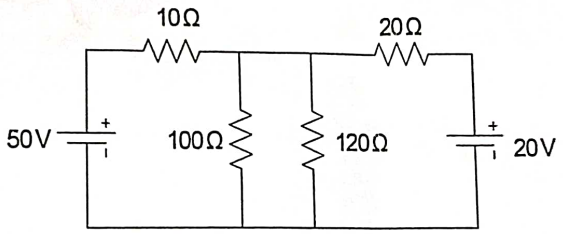
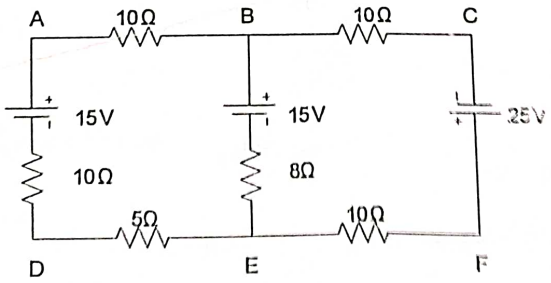
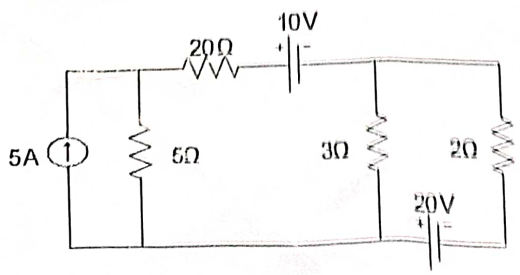
SECTION – A

1. Attempt all questions in brief.

Q N	QUESTION	Marks	CO	BL
a.	Explain the following. (i) Active and passive element (ii) Unilateral and bilateral elements.	2	CO1	L2
b.	State and explain Kirchhoff's voltage law.	2	CO1	L2
c.	State and explain Kirchhoff's current law.	2	CO1	L2
d.	Distinguish between ideal and practical voltage source. Also draw their VI characteristics.	2	CO1	L1

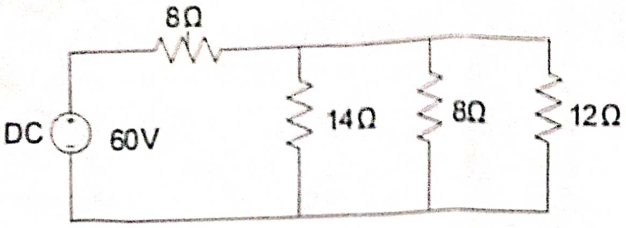
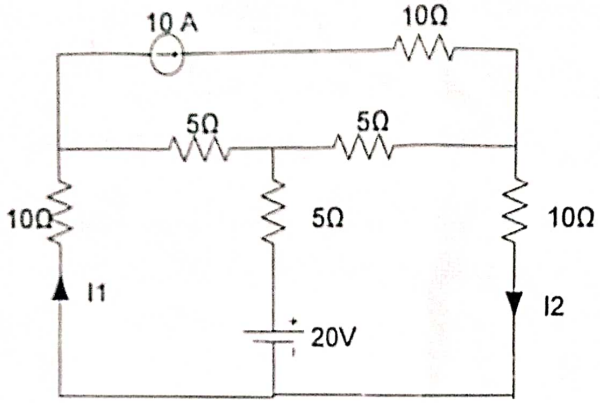
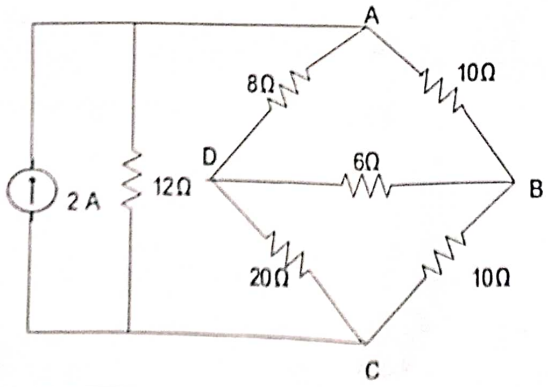
SECTION - B

2. Attempt any *TWO* parts of the following.

Q N	QUESTION	Marks	CO	BL
a.	Using nodal method, find current through 100 Ω resistor. 	5	CO1	L3
b.	Find the current in the 8 Ω resistor in the circuit using loop (mesh) analysis method. 	5	CO1	L3
c.	Find the current in, and voltage across the 2Ω resistance in the following figure. 	5	CO1	L3

SECTION - C

3. Attempt any *TWO* parts of the following:

Q N	QUESTION	Marks	CO	BL
a.	In the network, find the power delivered by the source using the nodal analysis. 	6	CO1	L3
b.	Using mesh analysis, calculate the currents I_1 and I_2. 	6	CO1	L3
c.	Using mesh current method, find the currents in resistances 10 Ω, 6 Ω, 20 Ω and 10 Ω in the circuit. 	6	CO1	L3

Bloom's Taxonomy Level (BL):-

Remember (L1), Understanding (L2), Apply (L3), Analyze (L4), Evaluating (L5), Creating (L6)