EE-305
Electrical Circuits

PCODE 13028

Duration: 1 Hour   [Total Marks: 20]

PART-A

Instructions:
1. Answer the following questions.   4 X 1 = 4
2. Each question carries **ONE** mark.

1. Define Electric Network.

2. Define "Star circuit" configuration of resistances.

3. List the two Energy Sources

4. State Norton's theorem.

PART-B

Instructions:
1. Answer the following questions.   2 X 3 = 6
2. Each question carries **THREE** marks.

5(a).   Three resistances 20Ω, 90Ω and 10Ω are connected in Star. Find the equivalent Delta

---- OR ----

5(b).   State Kirchoff's laws.

6(a).   Calculate the value of load resistance R_L to which maximum power may be transferred from the circuit shown in figure. Determine also the value of maximum power
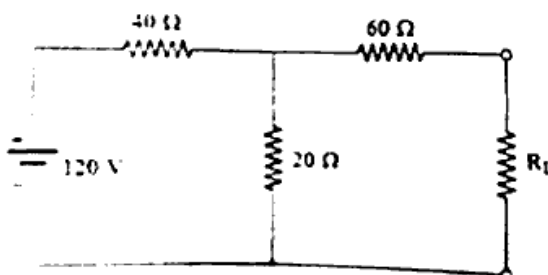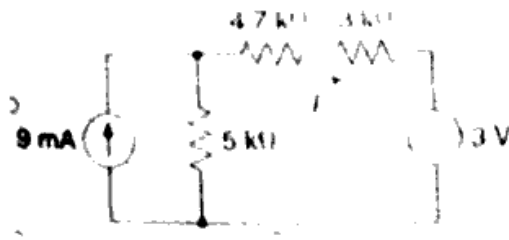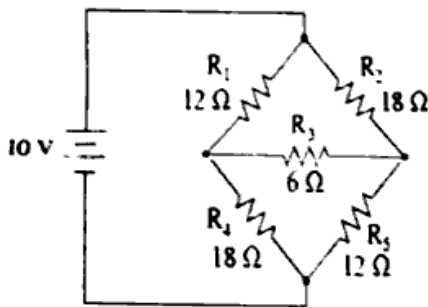

FIGURE :

---- OR ----

6(b). Compute the current through the 4.7 KΩ resistor in figure using source transformation ?

PART-C

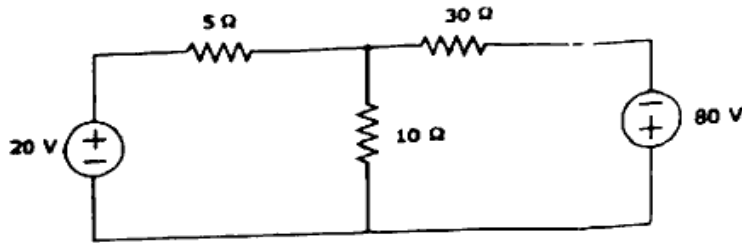**Instructions:**
1. Answer the following questions.   2 X 5 = 10
2. Each question carries **FIVE** marks.

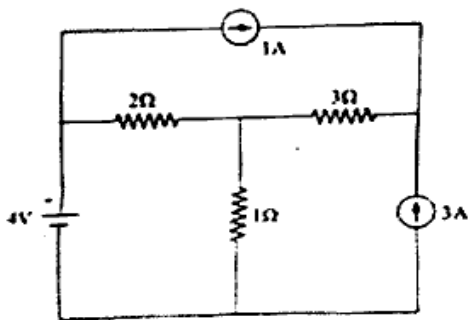7(a). Find the resistance between the terminals of the battery in bridge network as shown in Fig.1

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7(b). Find the voltage across 30 Ω resistor using **Mesh analysis**.

8(a). In the circuit shown in fig . Find the current through 1Ω resistor using superposition theorem.

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8(b). State and Explain Thevenin's Theorem