No. of Printed Pages : 4

BIEE-001

BTCSVI / BTECVI / BTELVI

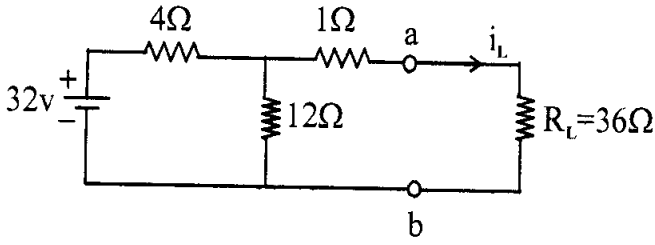
Term-End Examination, 2019

BIEE-001 : BASICS OF ELECTRICAL ENGINEERING

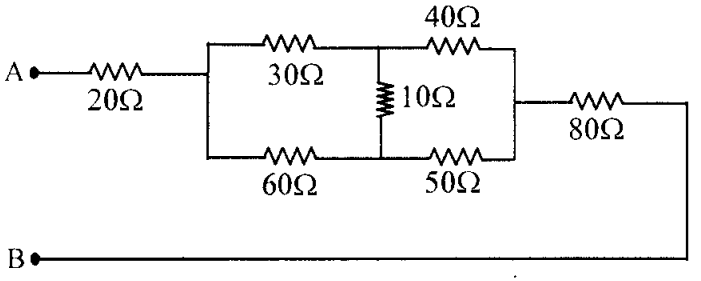
Time : 3 Hours] **[Maximum Marks : 70**

Note : Answer **any seven** questions in all. All questions carry equal marks. Use of Scientific Calculator is allowed.

1. State Thevenin Theorem. Find the current (i_L) and thevenin equivalent circuit of the circuit to the left of the terminal a - b. [3+7=10]



2. (a) In the network shown below, determine resistance between A and B. [5]



(b) What do you understand by temperature coefficient of resistance ? Give the name of 3 material whose resistance decrease with rise in temperature. [5]

3. (a) Explain the terms (**any two**) : [5]

(i) Magnetic intensity

(ii) Magnetic flux density

(iii) Permeability

(b) Explain the phenomenon of force between two parallel current carrying conductors. [5]

4. (a) Explain Fleming's Left and Right hand rules with the help of neat diagram. Where are they applied ? [5]

(b) Explain the Super Position theorem with suitable examples. [5]

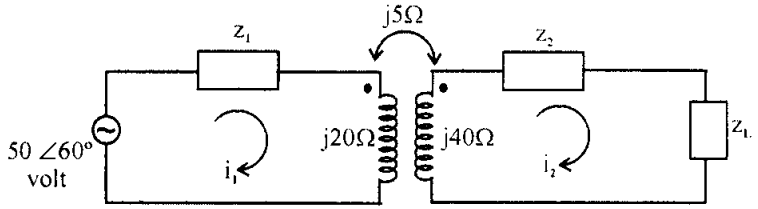
5. (a) Derive an expression for rise and decay of current in a R-L circuit. [5]

(b) Derive the conversion of Delta to Star network.[5]

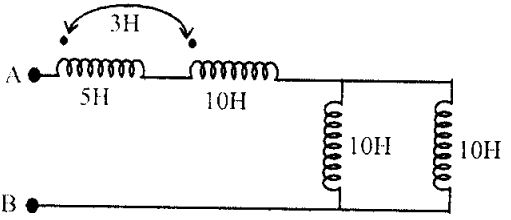
6. State "Blondel Theorem". Explain two and three wattmeter method to measure power in three phase unbalanced load. [10]

7. Define Power Factor. What are the drawbacks of low power factor ? Also discuss the importance of power factor. [10]

8. (a) In the circuit, calculate the input impedence and current I_1, take $z_1 = 60 - j100\Omega$, $z_2 = 30 + j40$ and $z_L = 80 + j60\Omega$. [7]



(b) Find the equivalent inductance of the circuit across terminal A - B. [3]



9. Write short notes on any two of the following : [2×5=10]

(a) Hyteresis loop

(b) Nickel cadmium cell

(c) Impedence triangle

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