Roll No. ....

Total Pages : 2

BT-1/D-18

ELECTRICAL TECHNOLOGY
Paper : EE-101(E)
Opt. (II)

31012

Time : Three Hours]

[Maximum Marks : 100

Note : Attempt *five* questions in all, selecting at least *one* question from each of the four Sections A, B, C and D.

SECTION–A

1. (a) Explain in detail the theory of AC response of series RC circuit with neat diagrams. 10

    (b) Draw neatly the waveforms on simultaneous time scale :
    $V_1 = V_m \sin \omega t$, $V_2 = V_m (\sin \omega t - 120°)$, $V_3 = V_m (\sin \omega t - 240°)$ in volts. 10

2. Write short notes on the following :

    (a) Ohm's law. 5

    (b) Rectangular form of representing a Phasor quantity. 5

    (c) Polar form of representing a Phasor quantity. 5
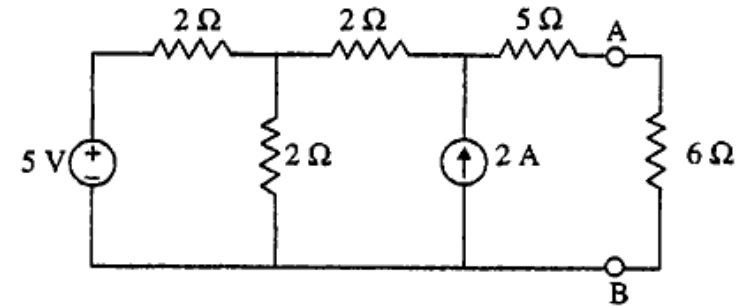
    (d) RMS value of a waveform. 5

SECTION–B

3. (a) Explain Maximum power transfer theorem and establish its condition. 15

    (b) Explain cut-off frequencies and bandwidth in case of series RLC circuit. 5

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4. Find Norton's equivalent of the given circuit w.r.t. 6 Ω resistor and find the current in 6 Ω resistor. 20

SECTION–C

5. Establish the relations between :

    (a) Line voltage and phase voltage in a star connected 3-phase system. 10

    (b) Line current and phase current in a delta connected 3-phase system. 10

6. (a) Explain O/C and S/C tests in a single phase transformer with the help of neat sketches. 15

    (b) Explain transformer at no load with phasor diagram. 5

SECTION–D

7. Explain how is a 3-phase pulsating magnetic flux equivalent to a bipolar revolving flux with the help of neat sketches. How this concept is used to explain working of 3-phase induction motor? 20

8. Explain principle, general construction and working of DC motor with suitable sketches. 20