Code No: R22025   R10   SET - 1

II B. Tech II Semester Supplementary Examinations, April-2018
ELECTRICAL CIRCUIT ANALYSIS - II
(Electrical and Electronics Engineering)
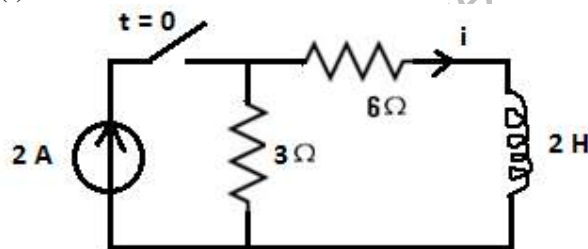(For 2010 B.Tech and 2011 Lateral Entry B.Tech admitted batch only)
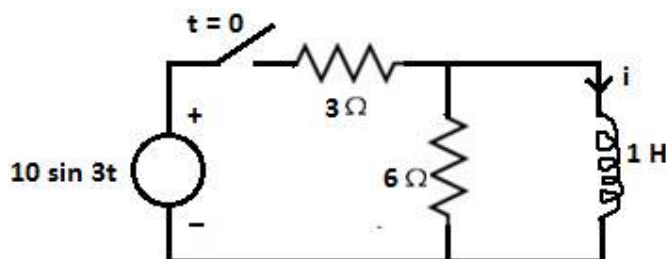
Time: 3 hours   Max. Marks: 75

Answer any **FIVE** Questions
All Questions carry **Equal** Marks
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1. a) Derive the relationship for the active power in the three phase balanced star (8M) connected load in both line and phase quantities
   b) A balanced delta connected load with phase impedance (8+j12)Ω is connected to a (7M) balanced supply of line voltage 150V. Calculate the line current and the total power absorbed by the load

2. a) Explain the analysis of three phase unbalanced circuits using star delta (7M) transformation technique
   b) A delta connected balanced supply of 150 V is connected to a star connected (8M) unbalanced load of impedances $(9 + j15)\,\Omega, (16 - j8)\,\Omega$ and $(5 + j10)\,\Omega$. Determine the total complex power of the load

3. a) Derive the expression for the current in the inductor in a series RLC circuit with DC (7M) excitation and draw the waveform
   b) In the circuit below, the circuit is closed at t = 0, find the expression for the current (8M) i(t) for t > 0

4. a) Derive the expression for the voltage across the capacitor in a series RC circuit with (7M) sinusoidal excitation and draw the waveform
   b) In the circuit below, determine the current in the inductor for t > 0. The switch is (8M) closed at t = 0
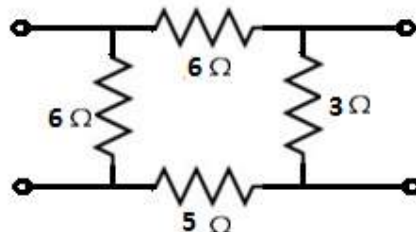
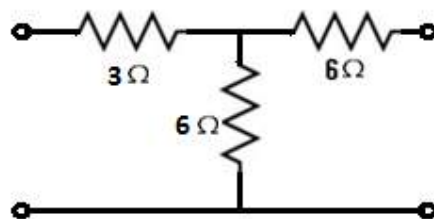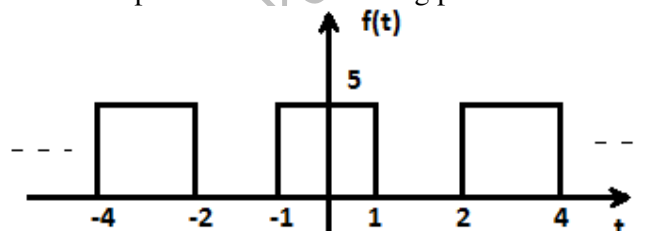Code No: R22025   R10   SET - 1

5. a) Derive the condition in terms of admittance parameters for a two port network to be (7M) reciprocal

   b) For the circuit diagram below, determine impedance parameters (8M)

6. a) Derive the expression for the ABCD parameters of two 2 – port networks when (7M) they are cascaded

   b) Two identical circuits of the form shown below are connected in parallel. (8M) Determine the hybrid parameters of the combination

7. a) Explain in detail about the Exponential form of Fourier series (7M)

   b) Find the Fourier series expansion of the following periodical waveform (8M)

8. a) Explain in detail about time shifting and frequency shifting properties of Fourier (7M) transforms

   b) Determine the Fourier transform of the following function (8M)