PVP 14

Code: EE3T4

II B.Tech - I Semester – Regular Examinations – December 2015

ELECTRICAL CIRCUIT ANALYSIS - II
(ELECTRICAL AND ELECTRONICS ENGINEERING)

Duration: 3 hours Max. Marks: 70

PART – A

Answer ***all*** the questions. All questions carry equal marks

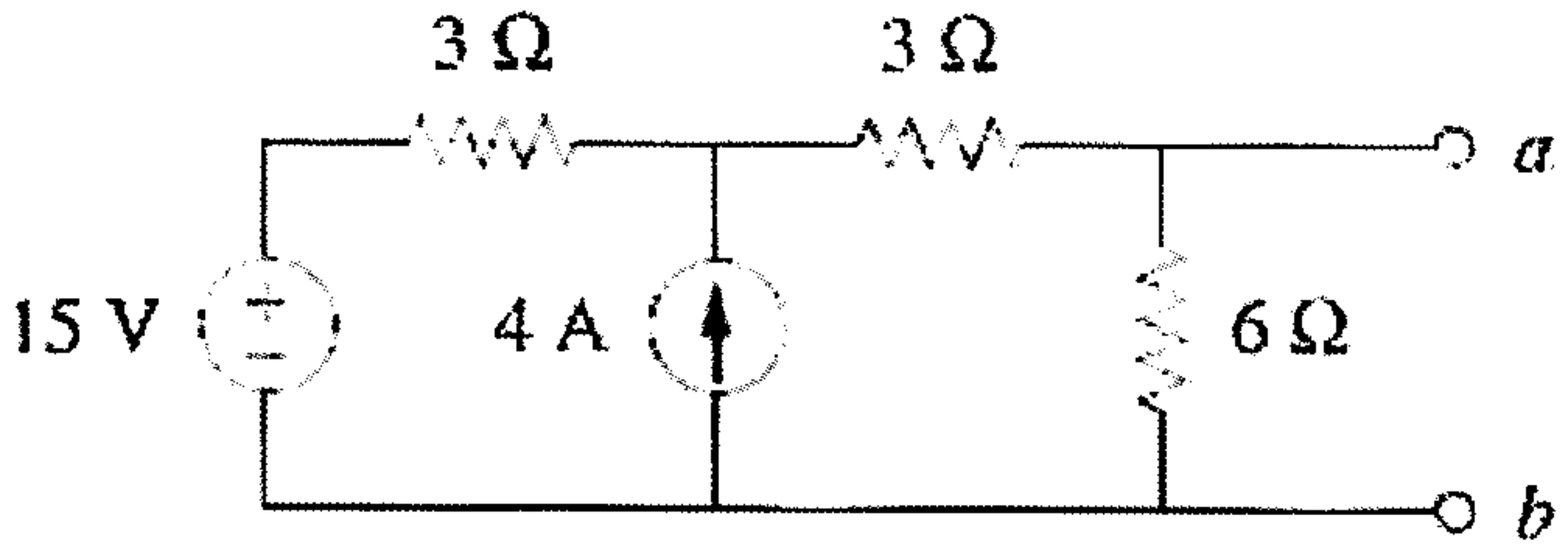
11x 2 = 22 M

1. a) State Ohm's Law.
   b) State Thevenin's Theorem.
   c) Write the relation between the Z and Y parameters of a Two-port network.
   d) What is the condition for symmetry in ABCD parameters?
   e) Write the condition for maximum power transfer theorem.
   f) State the final value Theorem.
   g) What do you understand by steady state stability?
   h) Write the Laplace transform of an Impulse signal and a Pulse Signal.
   i) What is the RMS and Average value of a sinusoidal waveform.
   j) What is Half-Wave symmetry?
   k) Draw the step response of an RC Circuit

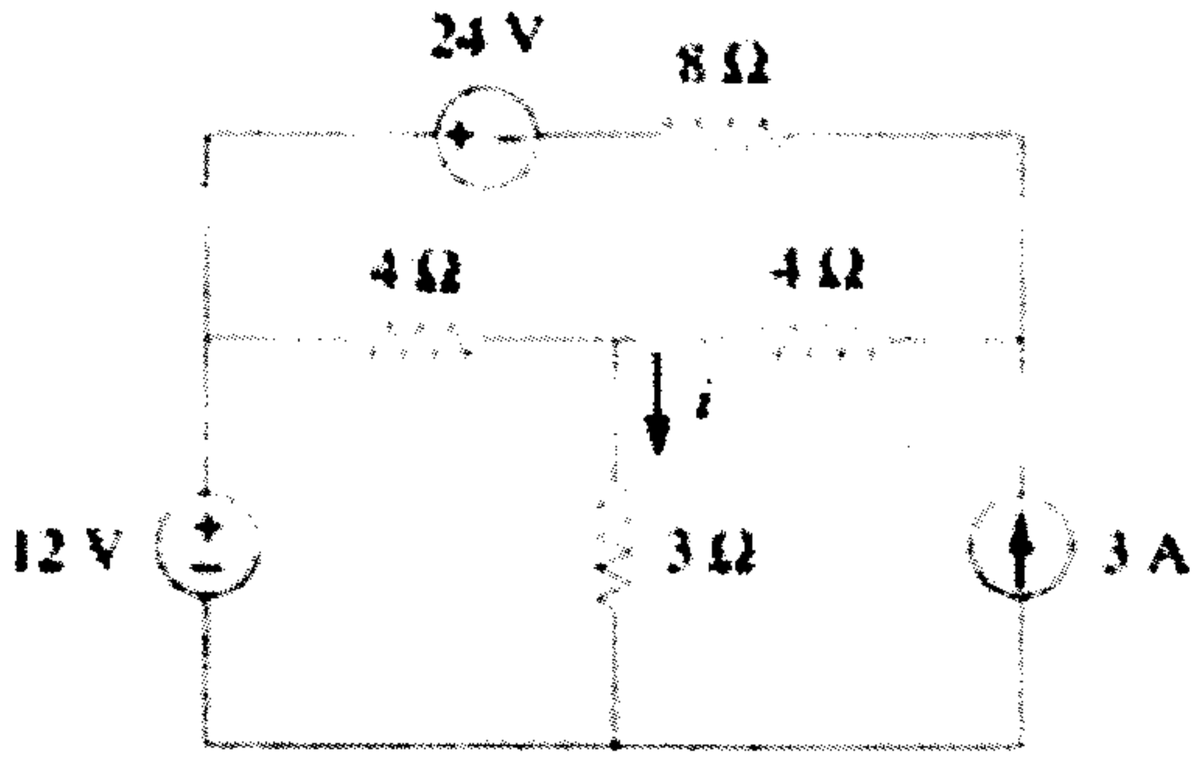
PART – B

Answer any ***THREE*** questions. All questions carry equal marks. 3 x 16 = 48 M

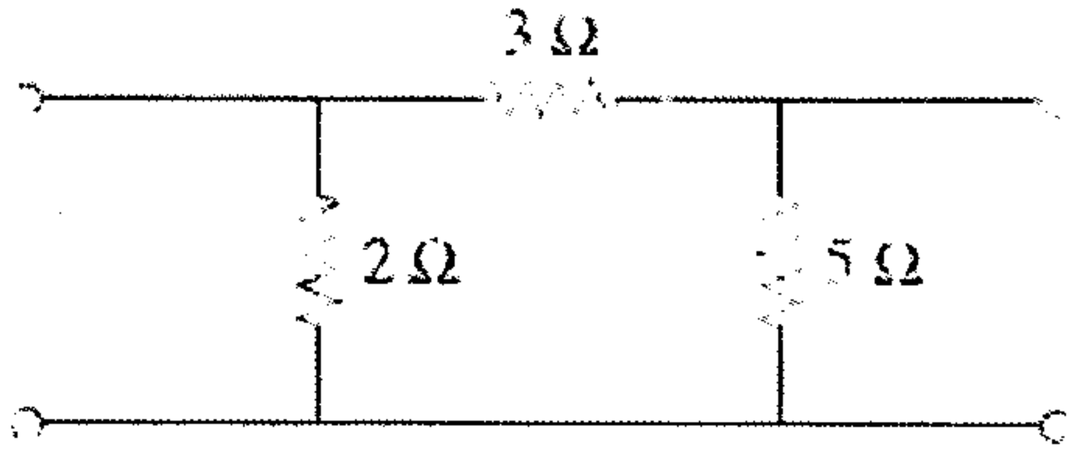
2. a) Find the Norton equivalent circuit for the circuit shown in the figure at terminals a-b. 8 M



b) For the circuit shown below, use the superposition theorem to find the current *i*. 8 M



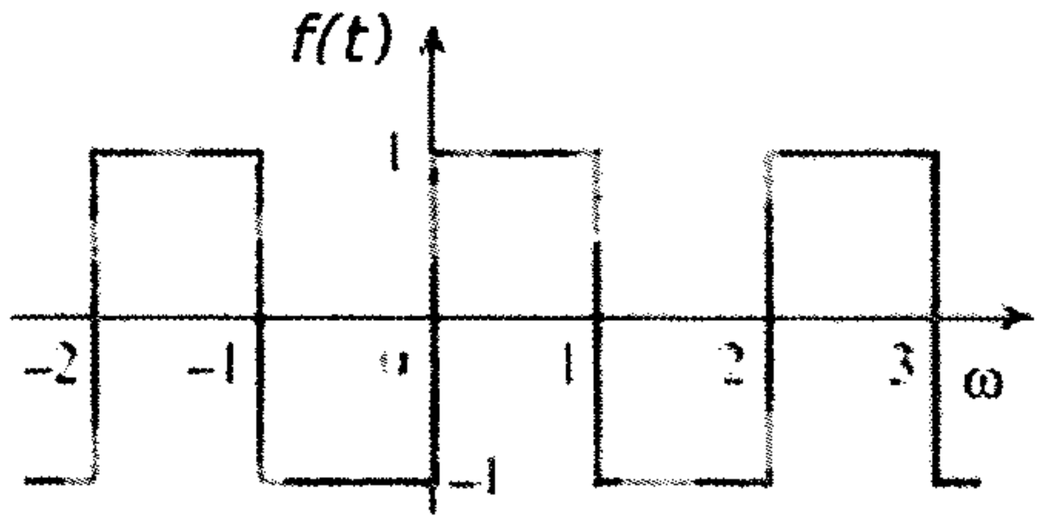
3. a) Determine the *h* parameters for the circuit shown below. 8 M



b) The Z parameters of a two-port network are $Z_{11}=10\Omega$, $Z_{22}=15\Omega$, $Z_{12}=5\Omega$, $Z_{21}=5\Omega$. Find the equivalent ABCD parameters. 8 M

4. a) Explain the properties of Laplace Transforms. 8 M

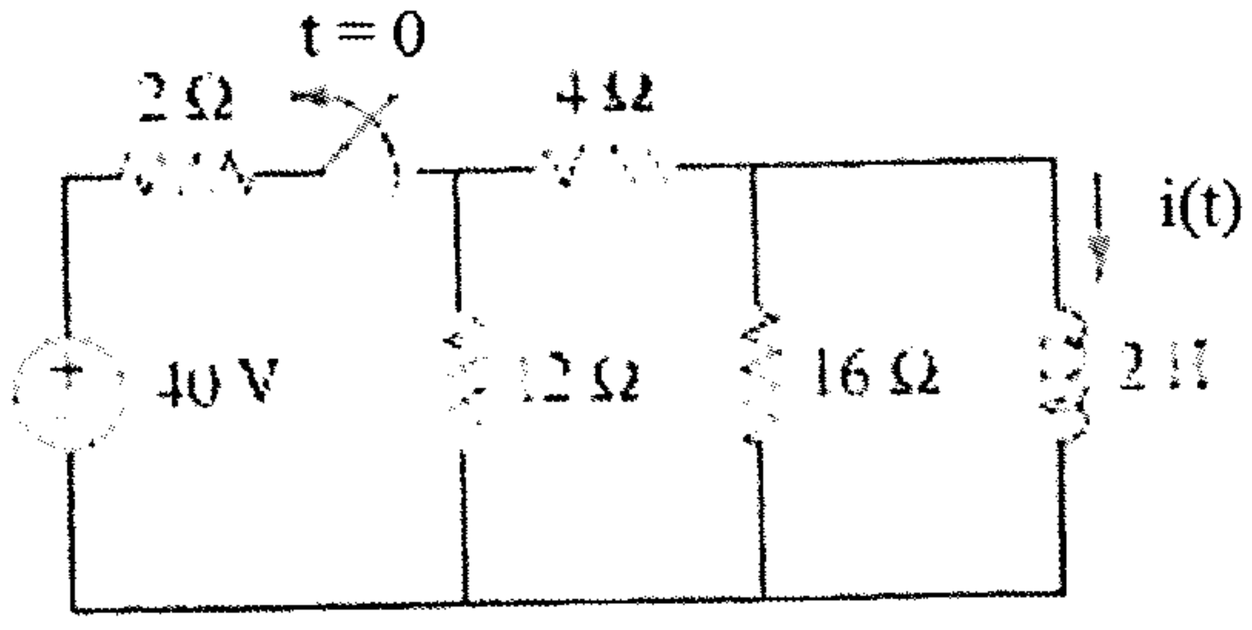
b) Find the Fourier series of the square wave. 8 M



5. a) Derive an expression for the step response of an R-C series circuit. Use Laplace transform approach. 8 M

b) Find the response of RL circuit for pulse input. 8 M

6. a) The switch in the circuit has been closed for a long time. At t = 0, the switch is opened. Calculate i(t) for t> 0. 8 M



b) For an RC series circuit, a sinusoidal voltage of $V(t)=V_m \sin(wt + \theta)$ is applied at t=0. Find the expression for i(t) for t>0.

8 M