PVP 14

Code: EE3T4

II B.Tech - I Semester–Regular/Supplementary Examinations – November 2018

ELECTRICAL CIRCUIT ANALYSIS - II
(ELECTRICAL & 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 Norton's Theorem.

b) State Superposition Theorem.

c) Write the condition for Reciprocal and symmetry in Y-Parameters.

d) Define Open Circuit reverse transfer Impedance and Open circuit Output Impedance.

e) State Final Value Theorem in Laplace.

f) Determine the Laplace Transform of $f(t)=4t^3+t^2-6t+7$.

g) State shifting property in Frequency Domain of a Fourier Transform.

h) Define time constant in RC circuit.

i) What is the Final condition of the elements Inductor & Capacitor, when switch is closed for long time?

j) Define the following i) Natural Response & ii) Forced Response

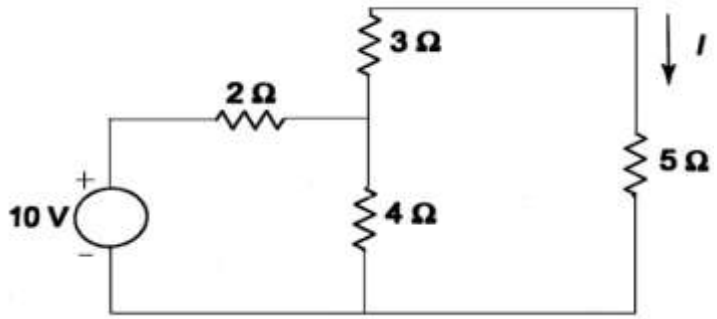
k) Write the expression for Critical Resistance and Damping Ratio of RLC series circuit.

PART – B

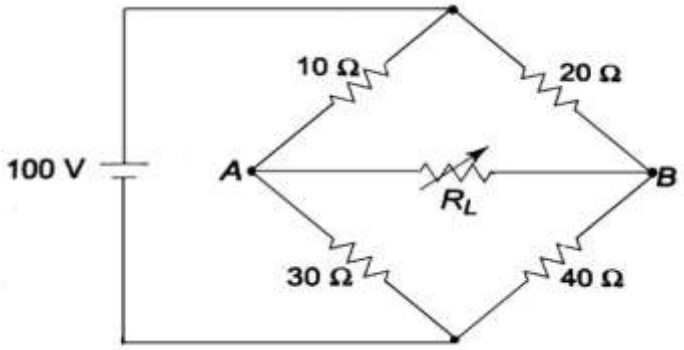
Answer any ***THREE*** questions. All questions carry equal marks.

3 x 16 = 48 M

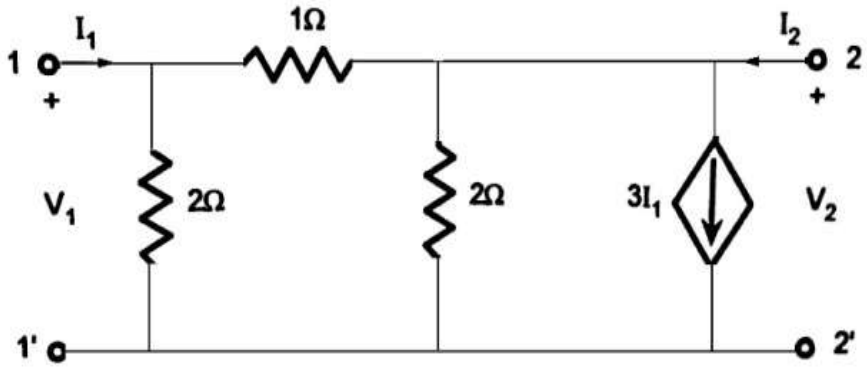
2. a) Verify the Reciprocity theorem for the following circuit 8 M



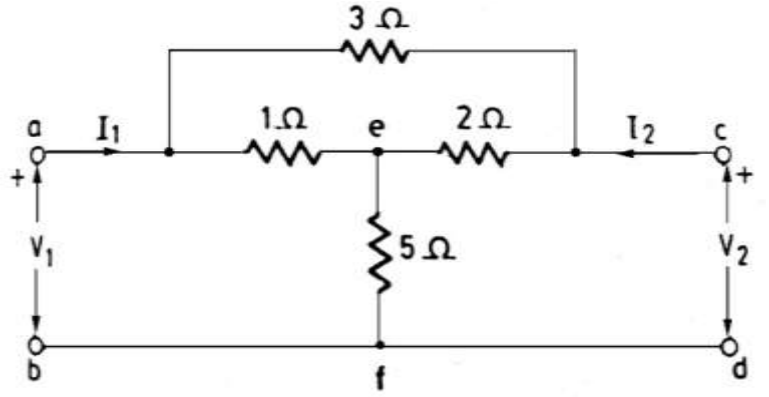
b) Determine the Maximum Power Delivered to the load in the circuit shown 8 M



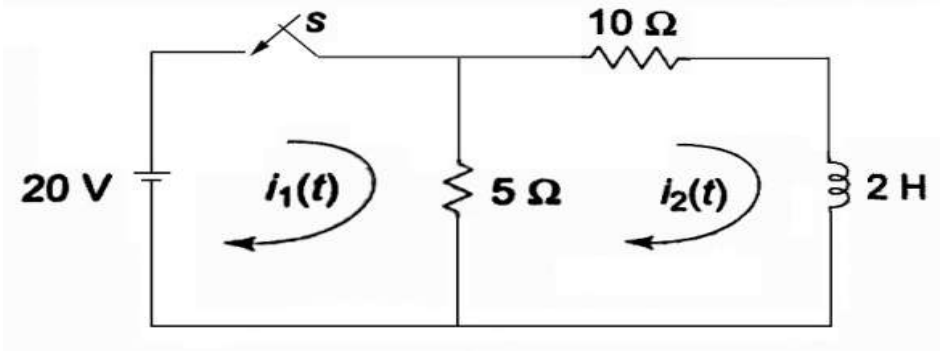
3. a) Find the Y-Parameters from the given Circuit shown 8 M



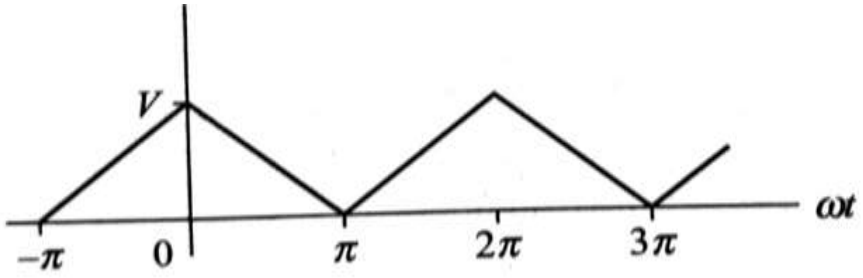
b) Determine the Open Circuit Parameters from the given Circuit shown. 8 M



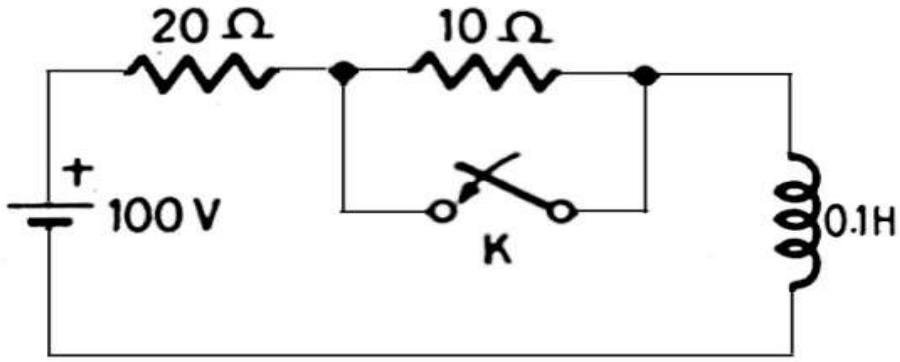
4. a) Determine the Current in 10Ω resistor when switch is closed at t=0. Assume initial current through the inductor is zero. 8 M



b) Determine the Trigonometric Fourier Series for Triangular Wave as shown in figure. 8 M



5. a) Determine the complete expression for the Current, when Switch K is closed at t=0. 8 M



b) Derive an Expression for the Step Response of the RL Series Circuit. Use Laplace Transform approach. 8 M

6. Determine the Resultant Current when Voltage V=50 cos (100t+Ø) is applied to the circuit at Ø=30^{o} 16 M