

Code: EC2T3

I B.Tech-II Semester-Regular Examinations - July 2014

NETWORK THEORY
(Electronics & Communication Engineering)

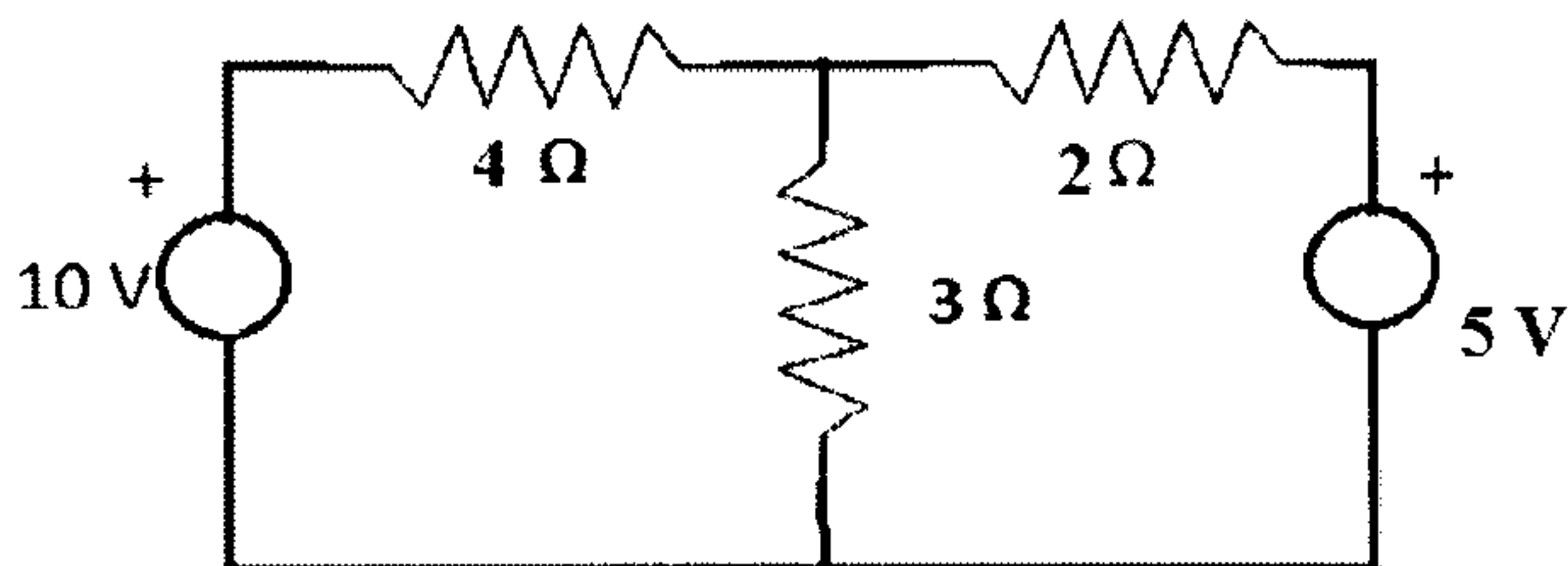
Duration: 3 hours

Marks: 5x14=70

Answer any FIVE questions. All questions carry equal marks

1. a) Define Supermesh and Mesh. 7 M

b) Using Nodal analysis determine the currents in each of the branches of the following circuit. 7 M



2. a) Distinguish between planar graph and non-planar graph.

7 M

b) Explain how the Tieset matrix of a Network can be obtained.

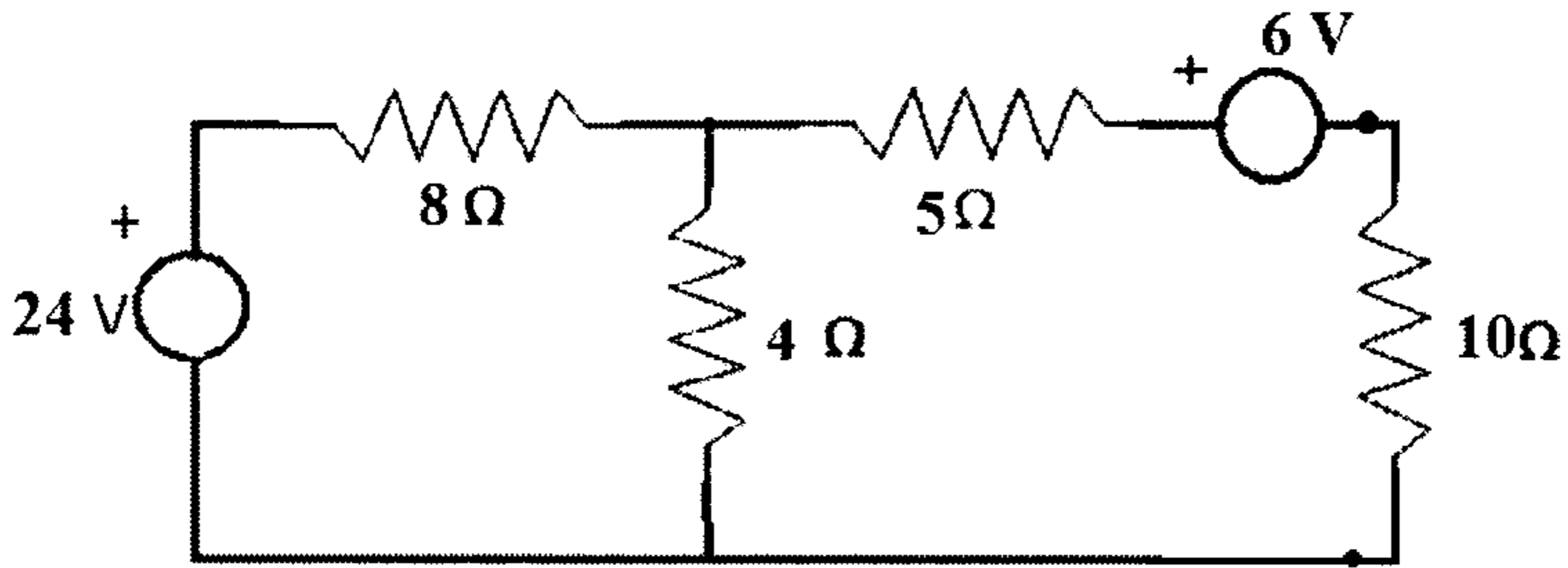
7 M

3. a) Define Superposition theorem.

7 M

b) Use Thevenin's Theorem to determine the current through the 10Ω resistor in the following circuit.

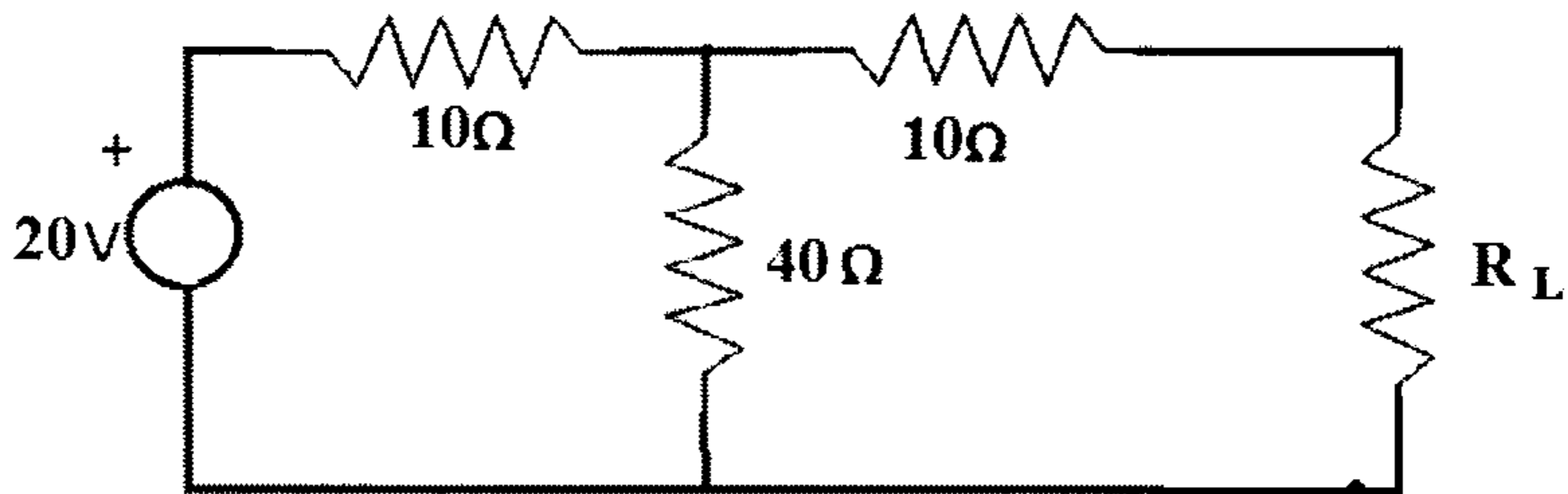
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4. a) Give the applications of Milliman's theorem. 7 M

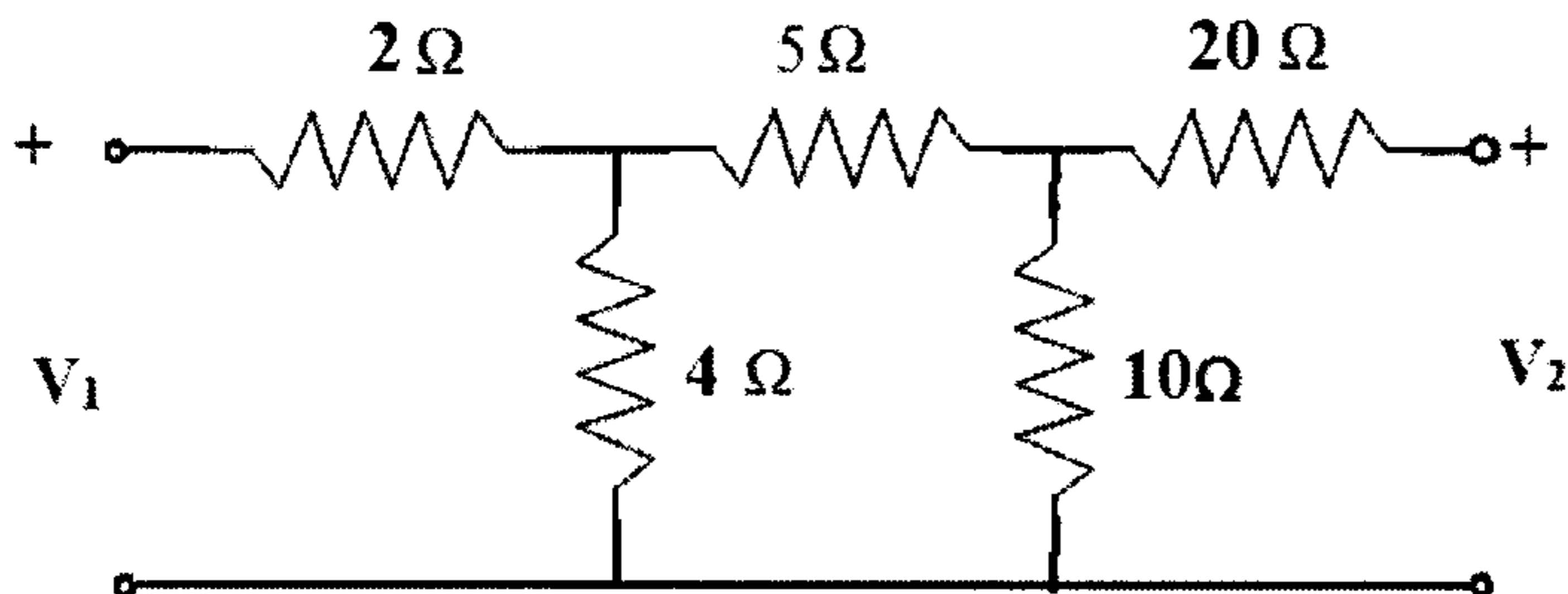
b) Determine the load Resistance " R_L " for the transfer of maximum power and also the power at that condition.

7 M



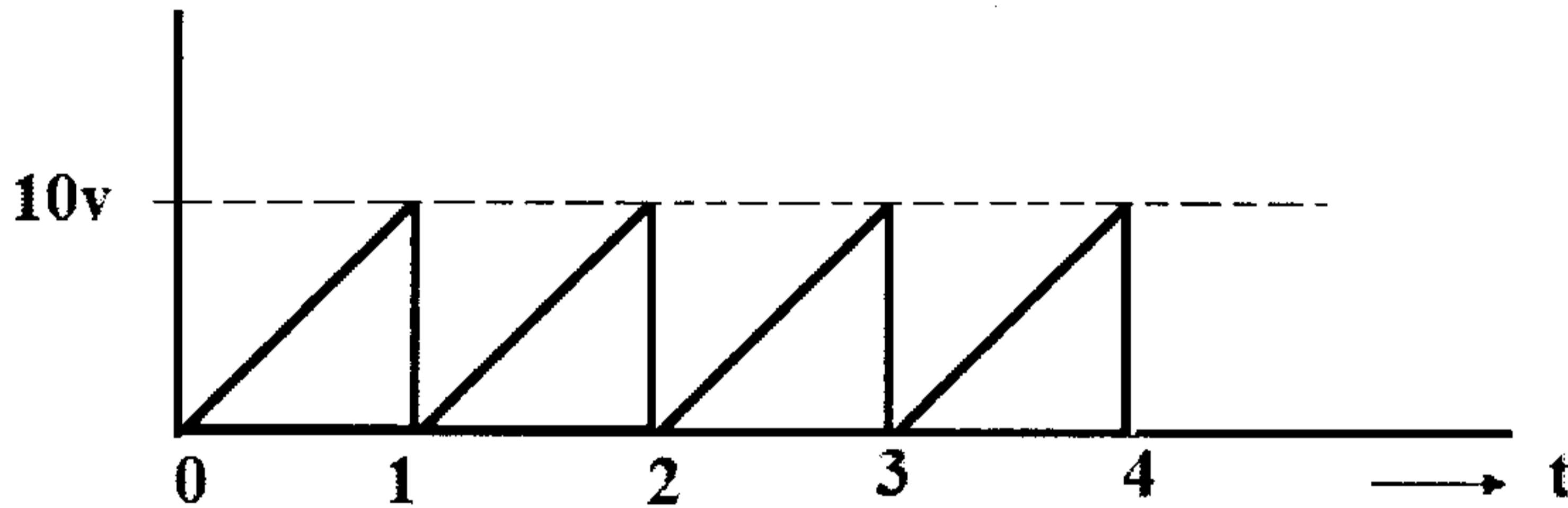
5. a) Show that $y_{12} = y_{21}$ if the circuit is Bi-lateral. 7 M

b) Determine Z-parameters of the following circuit. 7 M



6. a) What are complex Rectangular and polar form of representation of an alternating quantity. 7 M

b) Find the r.m.s value of the following waveform. 7 M



7. a) What are the advantages of Laplace transform. 7 M

b) Explain the behavior of a RC circuit when the input is a step function. 7 M

8. a) Define Q-factor and Bandwidth. 7 M

b) An R-L-C Series circuit has $R=6.7\Omega$; $L=0.54\text{mH}$ and $C=6\mu\text{F}$. Calculate the resonant frequency and current at resonance if the applied voltage is 220v. 7 M