

Code: EC2T3

**I B.Tech-II Semester-Regular Examinations - July 2013**

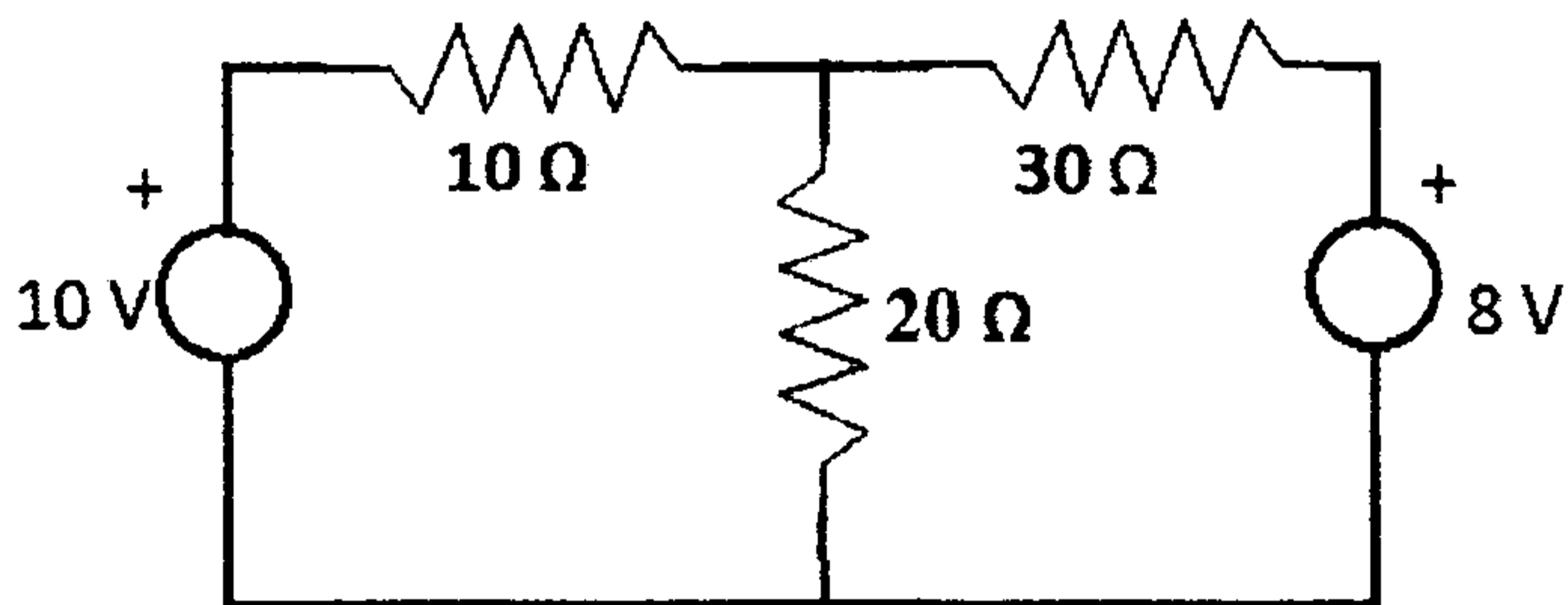
**NETWORK THEORY**  
(For Electronics & Communication Engineering)

Duration: 3 hours

Marks: 5x14=70

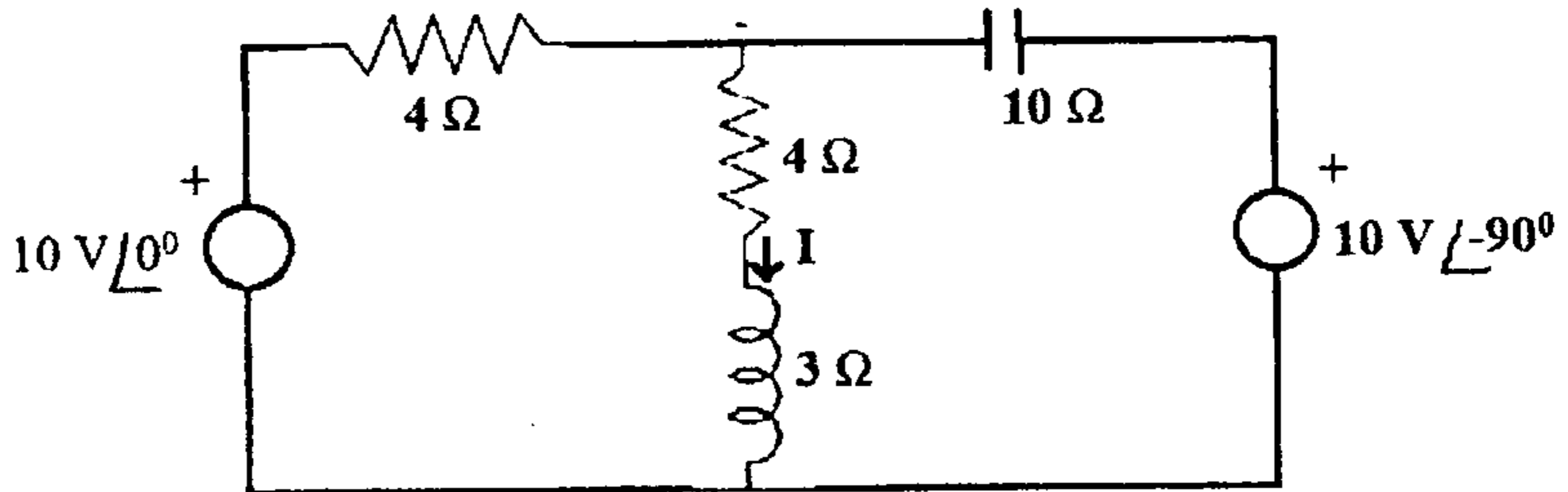
Answer any FIVE questions. All questions carry equal marks

- 1 a) Distinguish between Node and Super Node. 7 M
- b) Using Mesh Analysis determine the current in each branch of the following circuit. 7 M



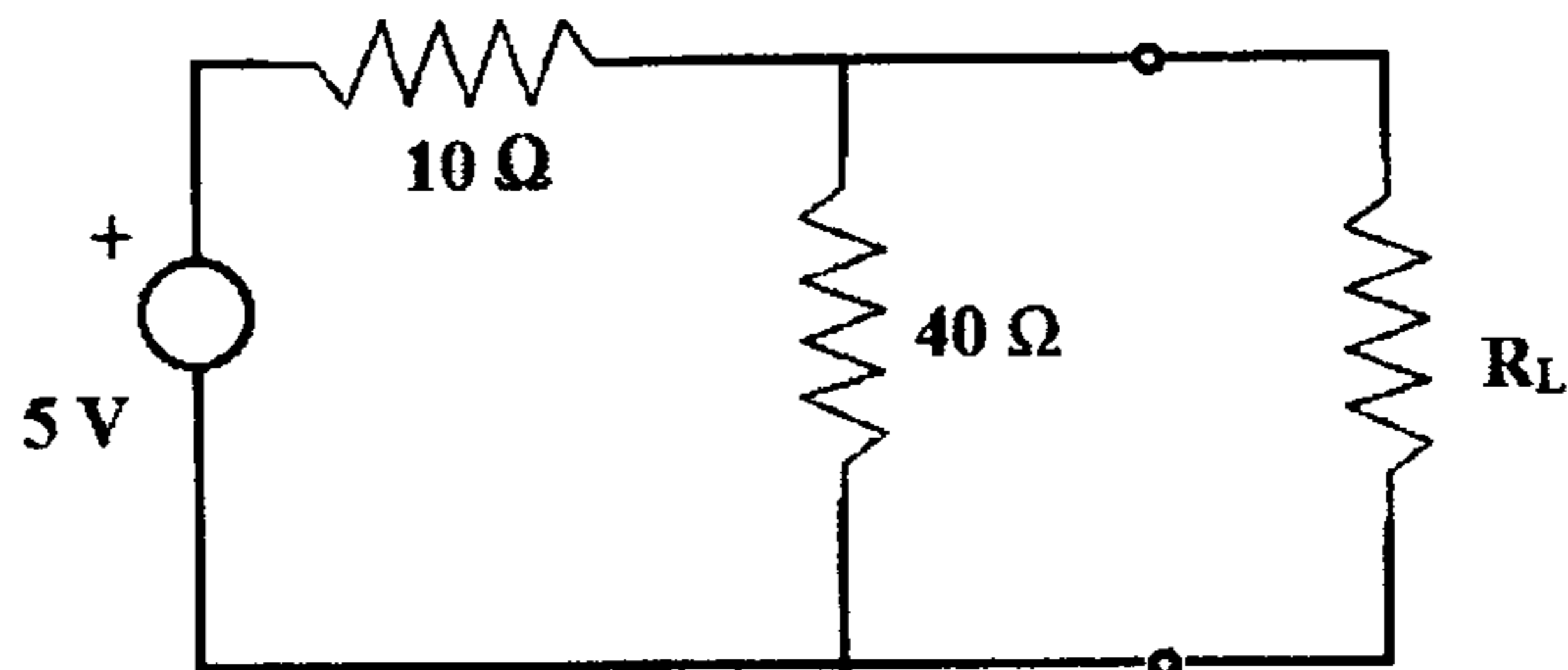
- 2 a) What is the significance of incidence matrix. 7 M
- b) Explain how the cut set matrix of a Network can be obtained. 7 M
- 3 a) State Thevenin's theorem. 7 M

b) Determine the current 'I' in the following circuit. 7 M



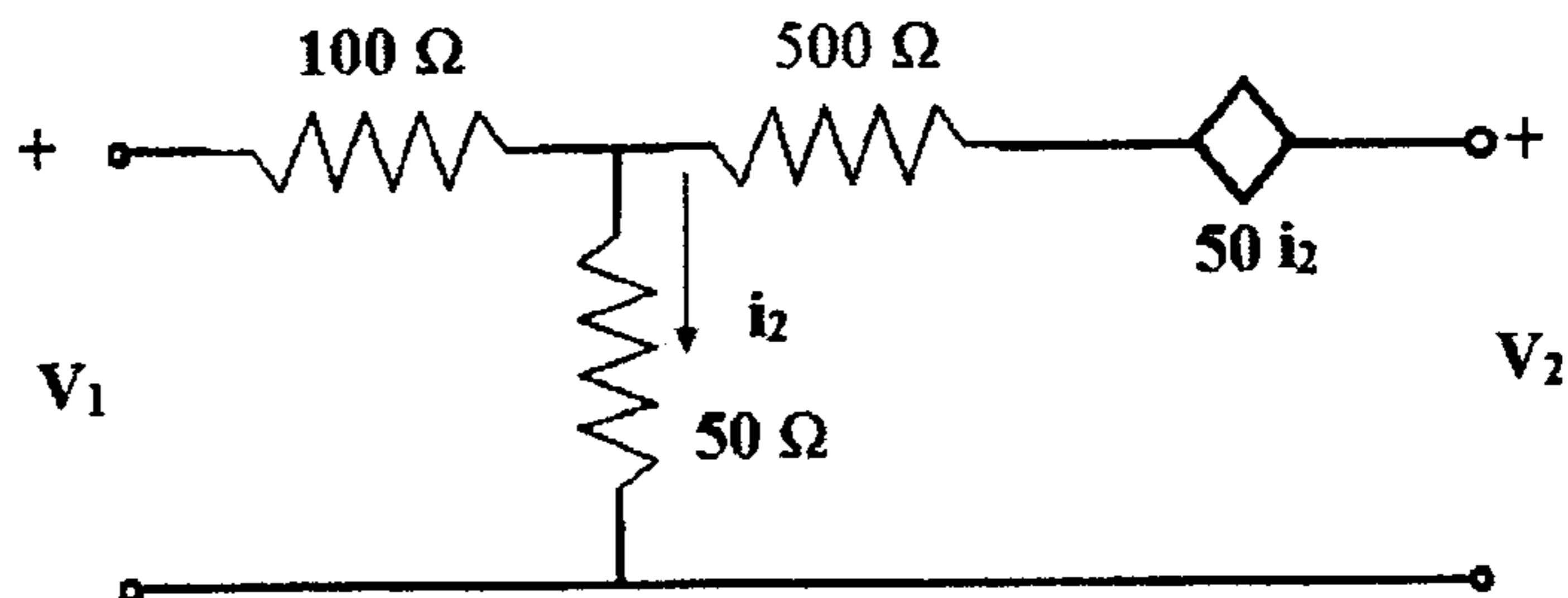
4 a) Give the uses of Compensation theorem. 7 M

b) Determine the value of the load resistor  $R_L$ , which will give maximum power to be transferred for source to load. 7 M

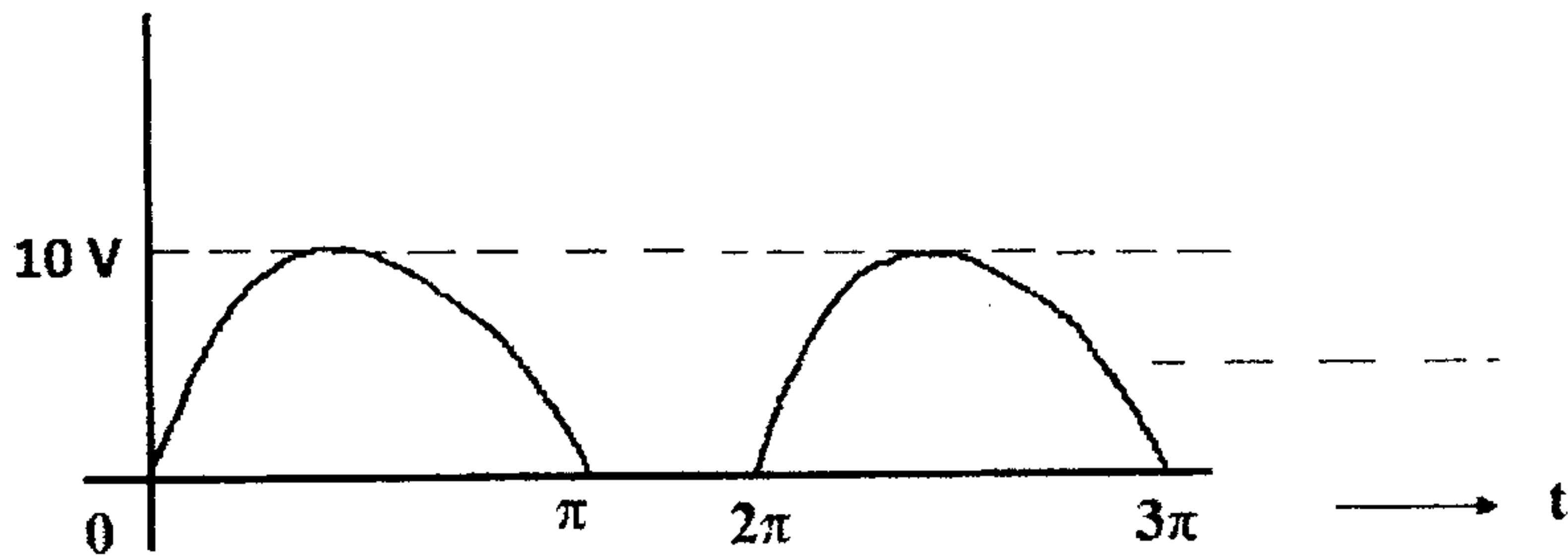


5 a) Show that if the circuit is reciprocal then  $Z_{12} = Z_{21}$ . 7 M

b) Determine y-parameter of the following circuit. 7 M



- 6 a) What is phase and phase difference. 7 M  
 b) Find the average value of the following wave form. 7 M



- 7 a) What are the various test signals. 7 M  
 b) Explain the behavior of a R-L series circuit when the input is a step function. 7 M
- 8 a) Define Reactance and Susceptance. 7 M

- b) Calculate the value of 'C' which results in resonance for the circuit, when  $f = 2500/\pi$  Hz. 7 M

