Part C

Answer any **one** *full questions from each module.*
Each full question carries 12 marks.

MODULE I

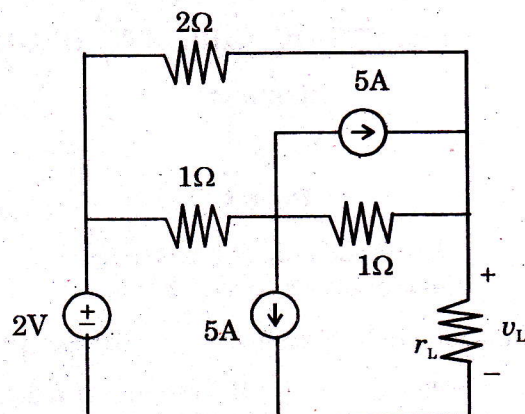11. Find v_L in the circuit of Fig. 1 using Superposition theorem.

Fig. 1

Or

12. Obtain the maximum amount of power transfer in R from the sources using the theorems of Maximum power transfer in the network shown in Fig. 2. At what value of R the maximum power transfer will occur ?
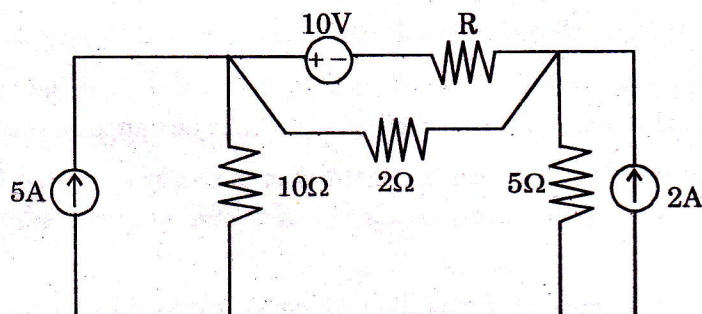

Fig. 2

MODULE II

13. An a.c. voltage of $v = V \sin 500 \pi t$ is applied to a series RL circuit. If the L – R circuit has R = 10 Ω and L = 0.1 H, calculate the ratio of maximum value to which the current rise to the steady state maximum value when the voltage is applied at an instant $t = 0.002$ sec.

Or