SVKM'S NMIMS
School of Technology Management & Engineering, Navi-Mumbai Campus
B.Tech. (Sem- I) (CSBS)
Assignment-4
Subject: Principles of Electrical Engineering
Date of Submission: 01/10/2019

Q.1 Determine the current trough 8Ω resistance in the network shown in fig. 1 by Thevenin's theorem.
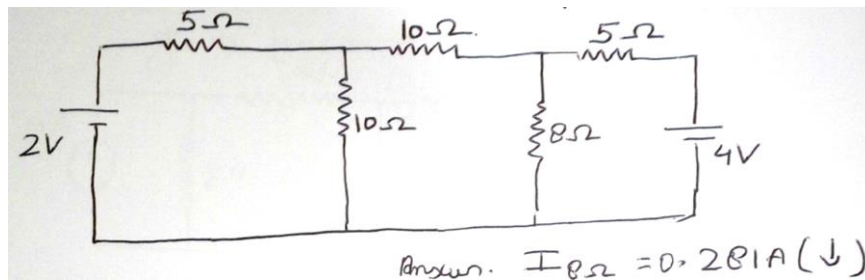

Answer. $I_{8\Omega} = 0.281 A (\downarrow)$

Fig. 1

Q.2 Determine Thevenin equivalent circuit and hence, find the current trough 30Ω resistor in network shown in fig. 2.

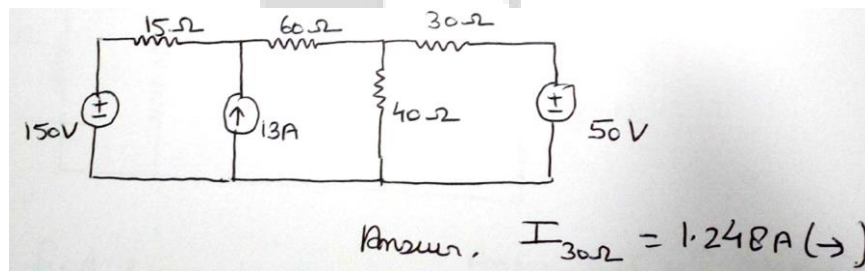Answer. $I_{30\Omega} = 1.248 A (\rightarrow)$

Fig. 2

Q.3 Determine current trough 10Ω resistor in network shown in fig. 3 by Thevenin's theorem.

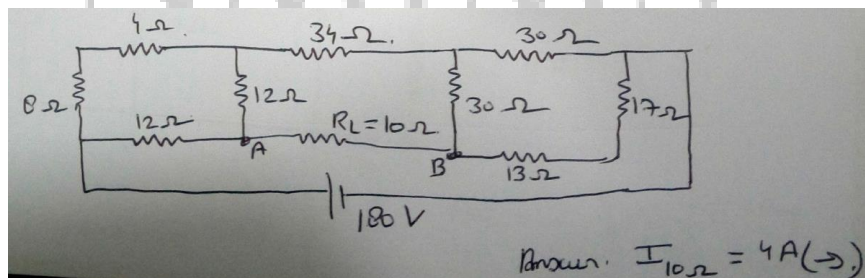Answer. $I_{10\Omega} = 4 A (\rightarrow)$

Fig. 3

Q.4 Calculate the current in 5Ω resistor for the network shown in fig. 4.
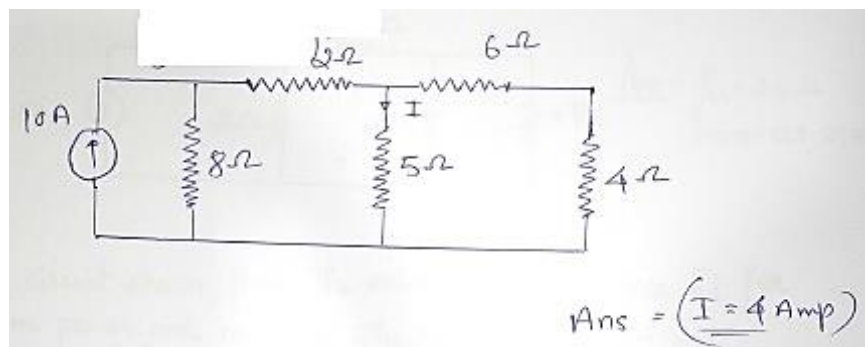

Ans = $(I = 4 Amp)$

Fig. 4

Q.5 Using Norton's equivalent circuit find current I in the given fig. 5.

Ans = (I = 0·37 Amp)
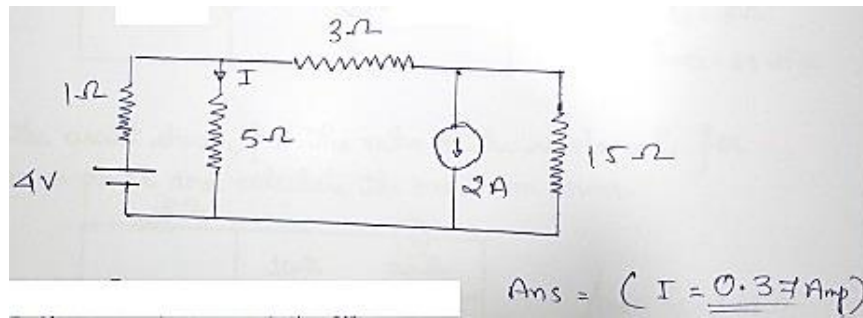
Fig. 5

Q.6 Find current trough $R_L = 4\Omega$, and also find power dissipated using Norton's theorem for the circuit of fig. 6.
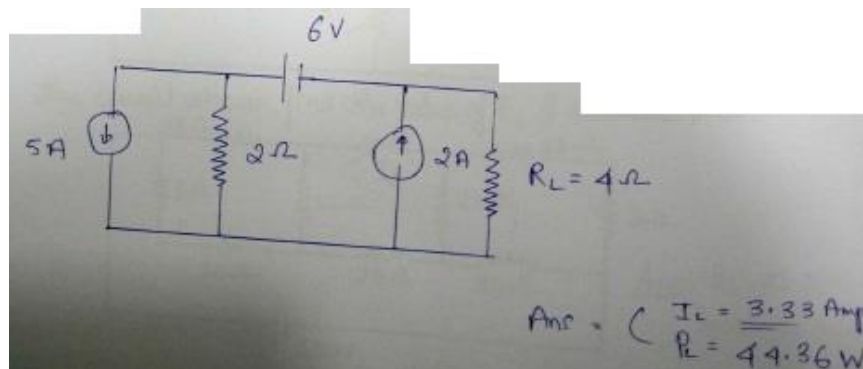

Ans. ($I_L = 3·33$ Amp
       $P_L = 44·36$ W

Fig. 6

Q.7 For the circuit shown in fig. 7, find the value of resistance R_L for maximum power transfer and also calculate maximum power.
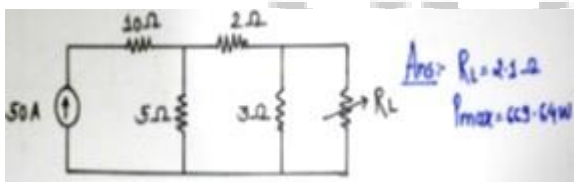

Ans> $R_L = 2.1\Omega$
Pmax = 669·64W

Fig. 7

Q.8 For the circuit shown in fig. 8, find the value of the resistance RL for maximum power and calculate the maximum power.
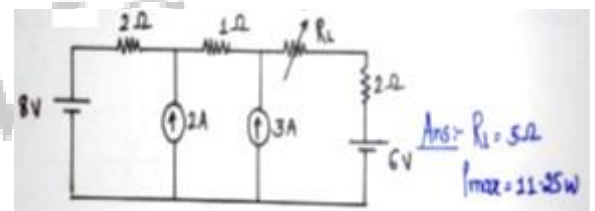

Ans> $R_L = 5\Omega$
Pmax = 11·25W

Fig. 8

Q.9 For the circuit shown in fig. 9, find the value of the resistance RL for maximum power and calculate the maximum power.
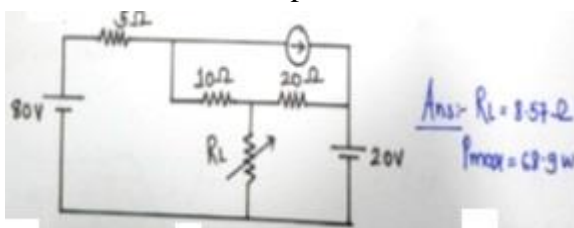

Ans> $R_L = 8.57\Omega$
Pmax = 63·9W

Fig. 9

Q.10 For the circuit shown in fig. 10, find the value of R_L and calculate $P_{max.}$

Ansr $R_L = 23·32\Omega$
Pmax = 52·51W

Fig. 10