Set (1)

TERNA ENGINEERING COLLEGE, NERUL
INTERNAL ASSESSMENT TEST-1

Class- FE (All) **Sub. – Basic Electrical and Electronics Engineering**
Date - 04/09/2015 **Time -1 Hr.** **Max. Marks – 20**

Q1 Attempt any five. 2x5=10

a) Equivalent resistance between points A & B for the network shown in **fig. 1** is-
(i) R (ii) 2R (iii) R/2 (iv) R/4

b) KVL equation for mesh-1 in **fig. 2** is-
(i) $-2I_1 + I_2 = -2$ (ii) $2I_1 + I_2 = -2$ (iii) $2I_1 - I_2 = -2$ (iv) $-2I_1 + I_2 = 1$.

c) Superposition theorem can be applied to-
(i) Network with only one source (ii) Linear network (iii) Nonlinear network (iv) All of above.

d) Norton's equivalent of the network shown in **fig. 3**, will have I_{SC} (or I_N) and R_i (or R_N) as-
(i) 2A & 2 Ω (ii)) 2A & 1 Ω (iii)) 1A & 2 Ω (iv)) 1A & 1 Ω.

e) For maximum power transfer, the load resistance R_L should be –
(i) Smaller than R_i (ii) Larger than R_i (iii) Equal to R_i (iv) $2R_i$.

f) Internal resistance of ideal voltage source is-
(i) Zero (ii) Infinity (iii) Anything between zero and infinity (iv) Cannot be predicted.

Q2 Attempt any one. 5x1=5

a) Determine the current through 12 Ω for network sown in **fig. 4** using source transformation.

b) Determine the current through 10 Ω for network sown in **fig. 5**.

Q3 Attempt any one. 5x1=5

a) Determine the current through 1 Ω for network sown in **fig. 6** using superposition theorem.

b) Find the value of R_L for maximum power transfer. Also find value of maximum power, for fig (7).

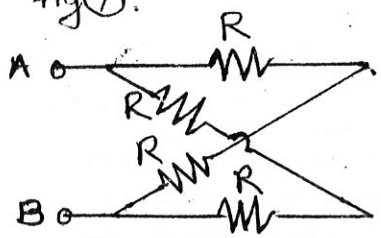

Fig.1 [Q-1(a)]

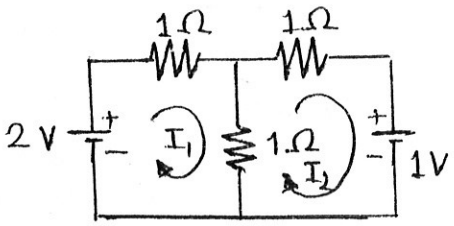

Fig.2 [Q-1(b)]

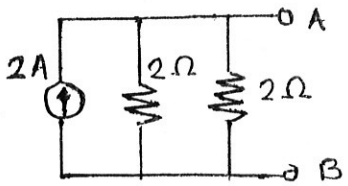

Fig 3 [Q-1(d)]

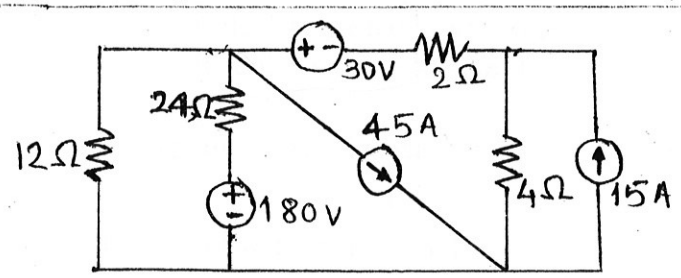

Fig. 4 [Q-2(a)]

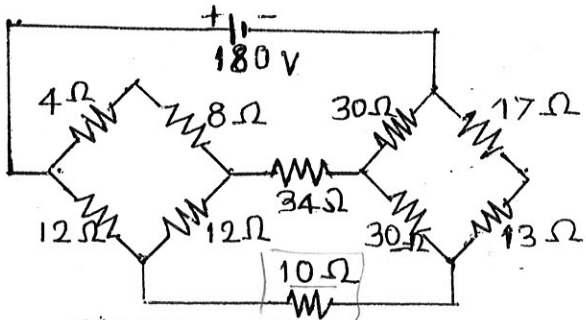

Fig 5 [Q-2(b)]

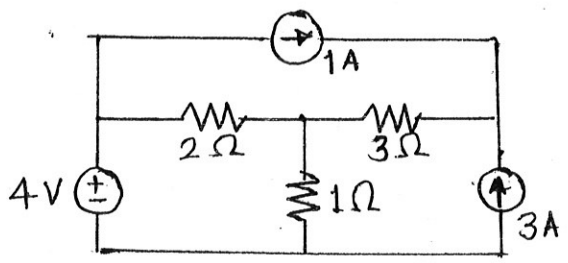

Fig. 6 [Q-3(a)]

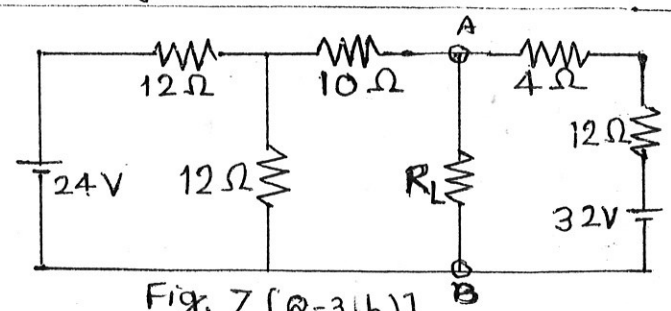

Fig. 7 [Q-3(b)]