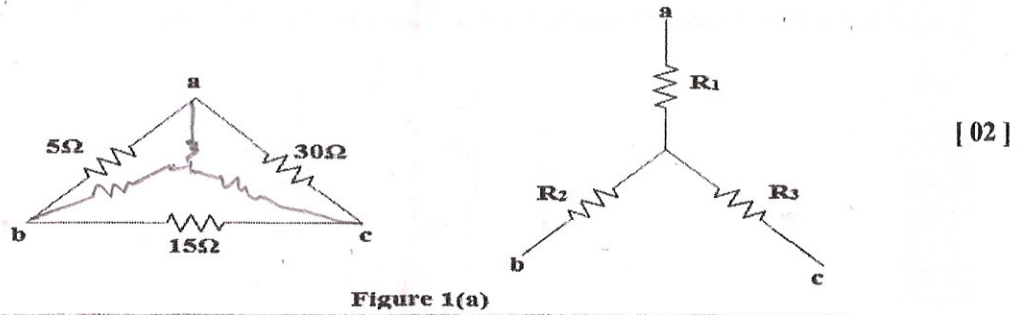


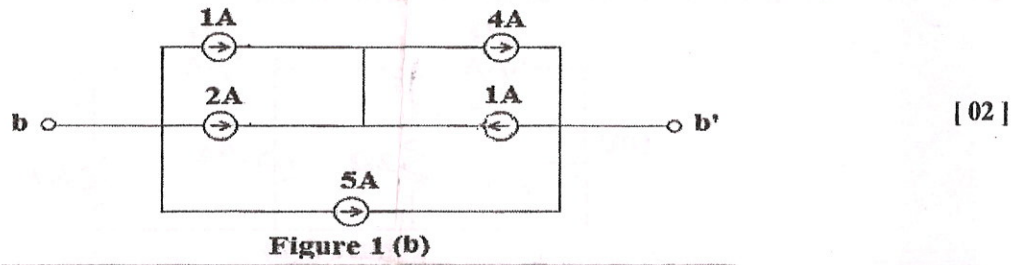
Note: Assume suitable data wherever necessary.

[1] Attempt Any Five out of Six

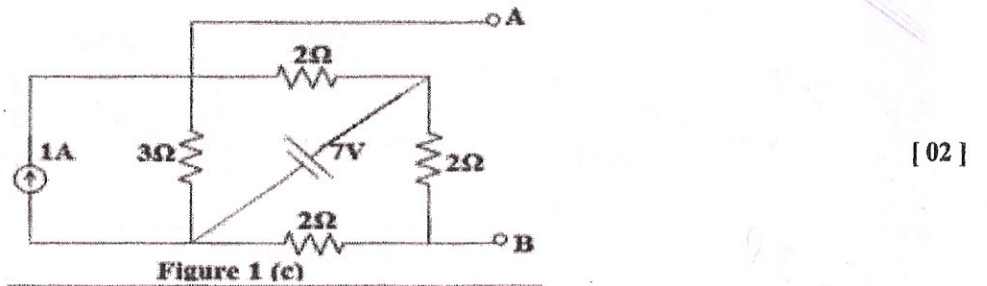
(a) A delta connected network with its Wye equivalent is shown in figure. Find the resistors R_1 , R_2 and R_3 .



(b) Replace the network of sources with I_{bb} .



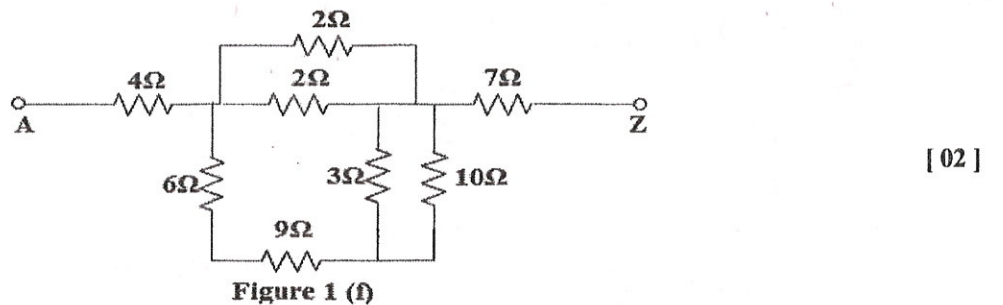
(c) Calculate the Thevenin's resistance across the terminals A and B.



(d) State Superposition Theorem.

(e) State and explain KCL and KVL.

(f) Calculate the equivalent resistance between A and Z.



[2] Attempt Any One

(a) Calculate the current through 20Ω resistor using Superposition Theorem.

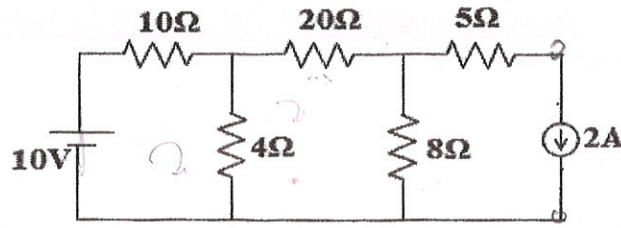


Figure 2(a)

[05]

(b) Calculate the current through 3Ω resistor using Thevenin's Theorem.

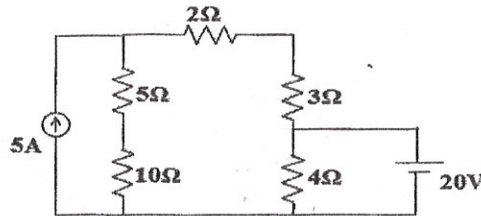


Figure 2(b)

[05]

[3] Attempt Any One

(a) Calculate the current through 3Ω resistor using Nodal Analysis.

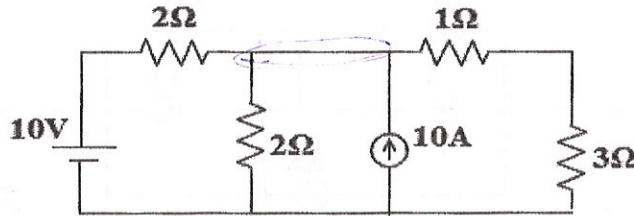


Figure 3(a)

[05]

(b) Calculate the current through 10Ω resistor using Source Transformation.

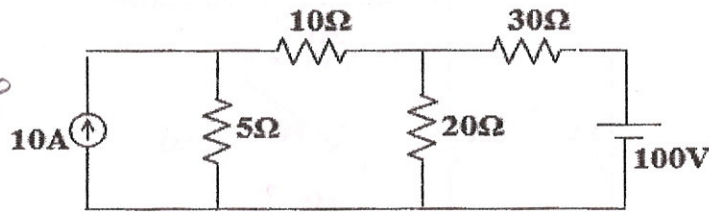
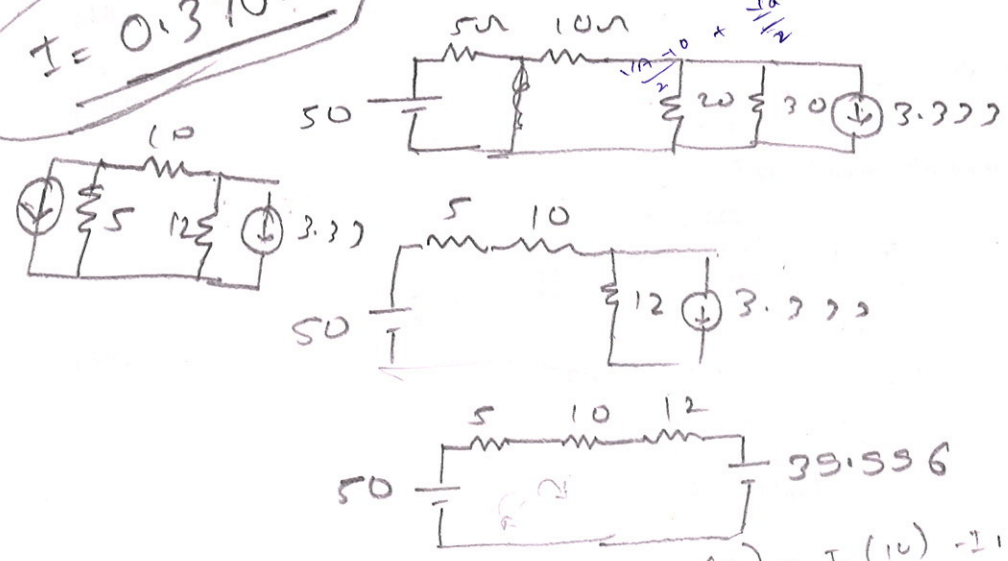


Figure 3(b)

[05]

$R = 27$
 $V = 10.0004$

$V = IR$
 $I = 0.37038$



$V = IR$
 $I = \frac{V}{R}$
 $\frac{100}{30}$

$$50 - I_1(5) - I_1(10) - I_1(12) - 39.556 = 0$$

$$50 - 27I_1 - 39.556 = 0$$