CSE250 QUIZ-01

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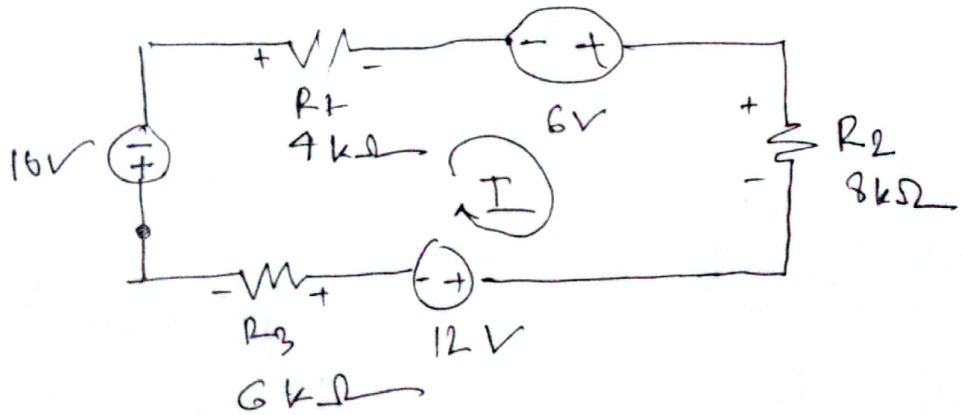
Section : 03

Solution of number 1:



KVL: $10V + IR_1 - 6 + IR_2 + 12 + IR_3 = 0$

$\Rightarrow 10 + I4I - 6 + I8I + 12 + 6I = 0$

$= 16 + 18I = 0.$

$\Rightarrow 18I = 16$

$\therefore I = \frac{16}{18}\ mA.$

∴ Power in R_1:

$$P = i^2 R_T$$

$$R_T = R_1 + R_2 + R_3$$

$$= 4 + 8 + 6$$

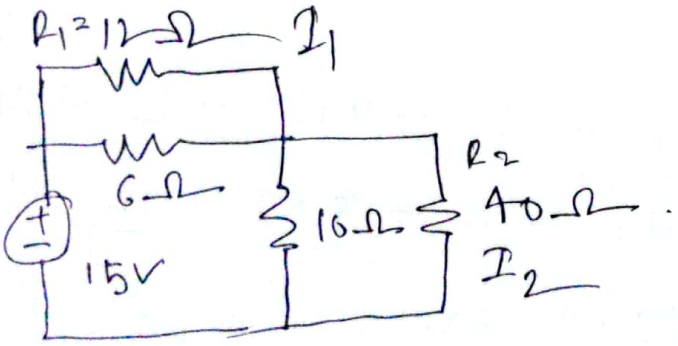
$$= 18\,k\Omega.$$

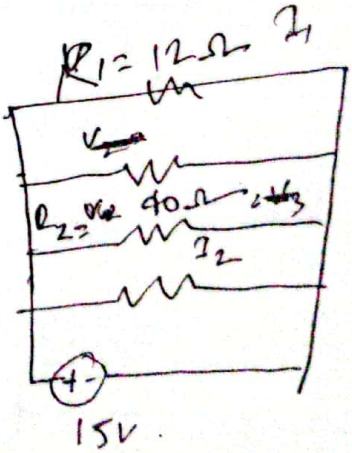
$$\therefore \text{power, } P = \left(\frac{16}{18}\right)^2 \times 18$$

$$= \frac{16}{18}$$

$$= 14.22\ mW.$$

Solution no. 02 §





$$V_1 = \frac{R_1}{R_T} \times 10V$$

$$= \frac{12}{\frac{1}{0.375}} \times 10 = 2.66 \times 10 = 26.67V.$$

(Ans)

Current through 40 Ω :

$$I_2 = \frac{R_T}{R_2} \times I_T$$

$$= \frac{2.67}{40} \times \frac{V}{R_T}$$

$$= \frac{2.67}{40} \times \frac{15}{R_T}$$

$$= \frac{15}{40}$$

$$= 0.375 \text{ mA}.$$

(Ans).