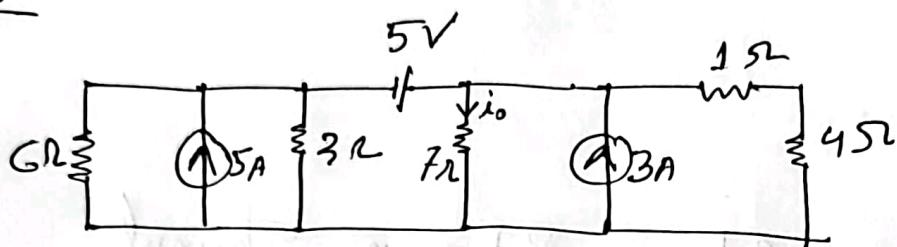


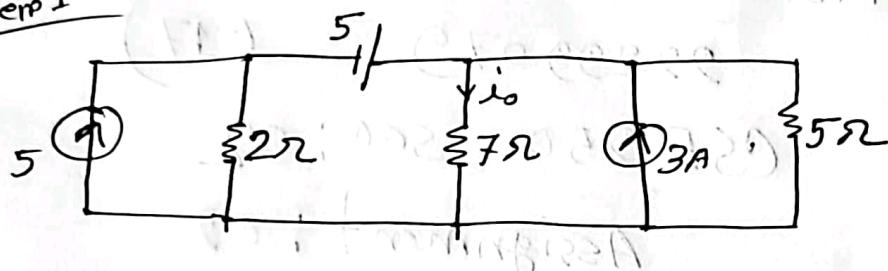
MD. Sohanur Rahman Shimul
22299079 (17)
CSE 250 sec: 02
Assignment : 02

Assignment 2

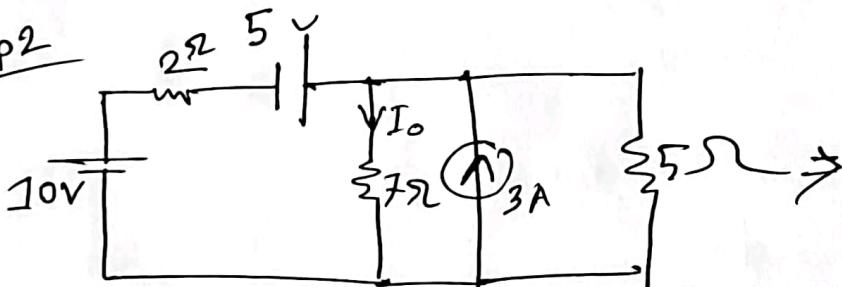
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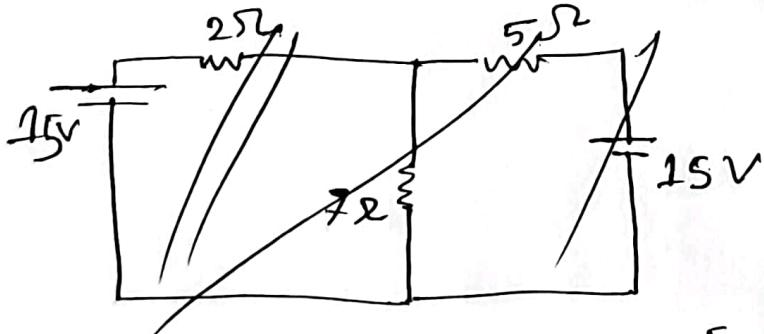
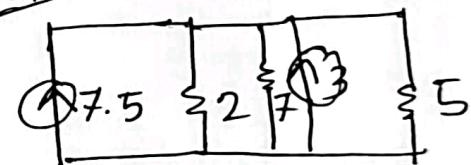
Step 1



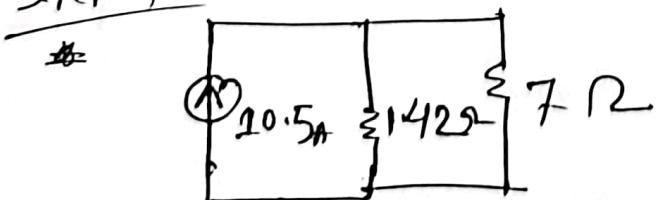
Step 2



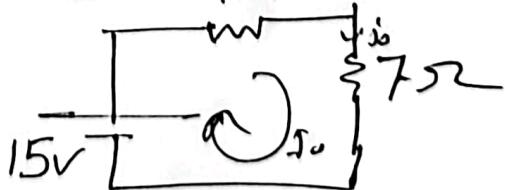
Step - 3



Step 4



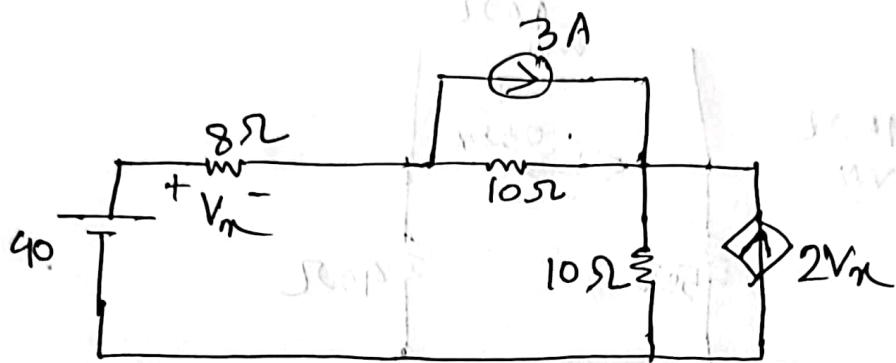
Step 5



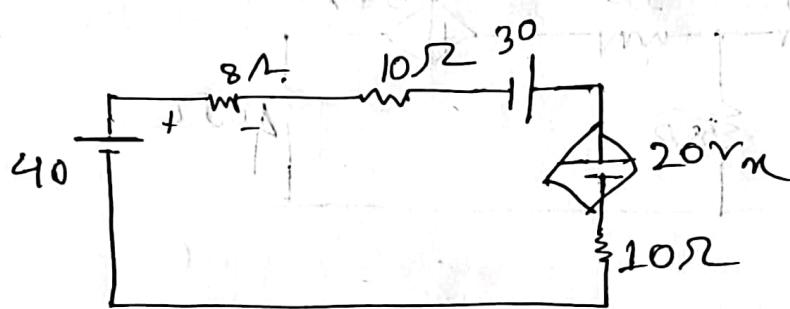
$$1.42I_o + 7I_o = 15$$

$$\therefore I_o = 1.7814 \text{ A} \quad (\text{Ans})$$

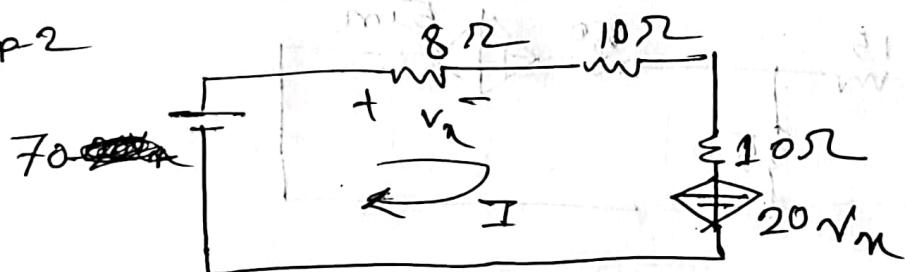
F.



Step 1



Step 2



$$V_x = 8I$$

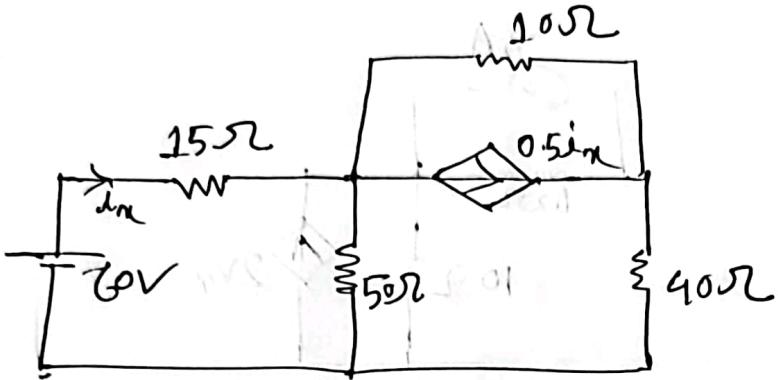
$$-70 + 8I + 10I + 10I + 20V_x = 0$$

$$\Rightarrow -70 + 8I + 20I + 20 \cdot 8I = 0$$

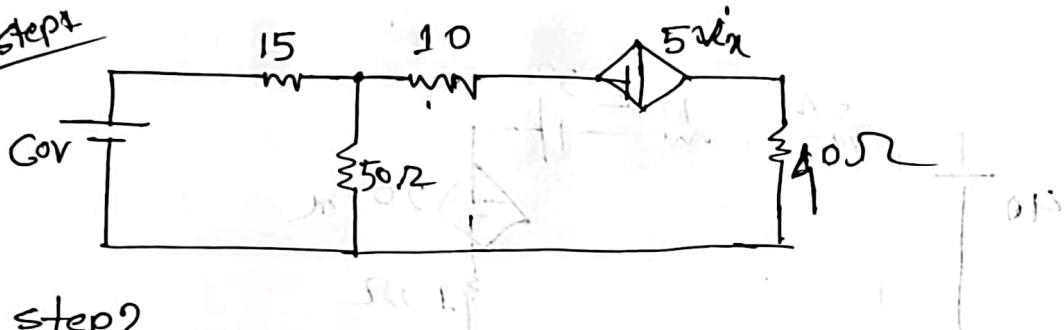
$$\therefore I = 0.3723 \text{ A}$$

$$\begin{aligned} \therefore V_x &= 8 \times 0.3723 \\ &= 2.978 \text{ V} \quad (\text{Ans}) \end{aligned}$$

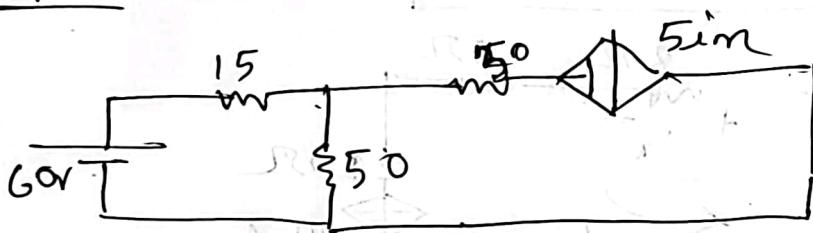
8



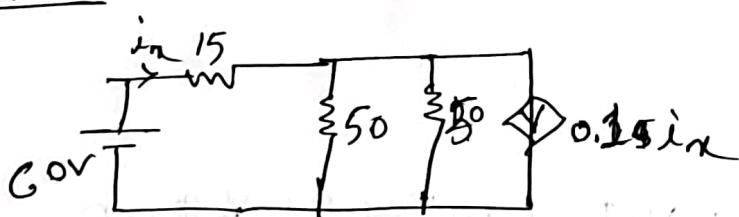
Step 1



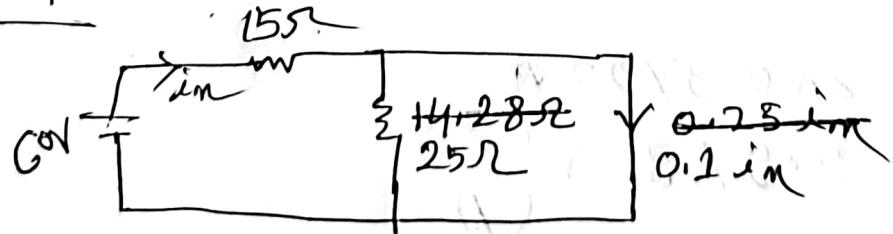
step 2



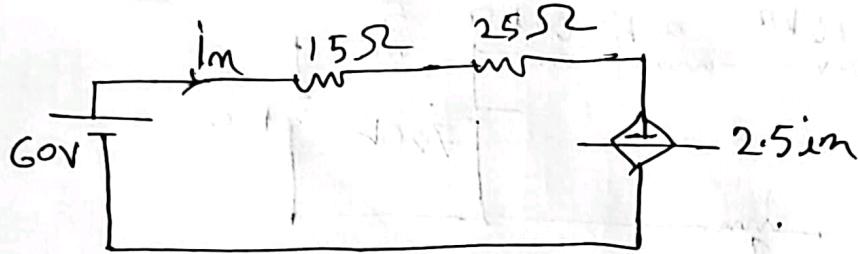
step 3



Step-4

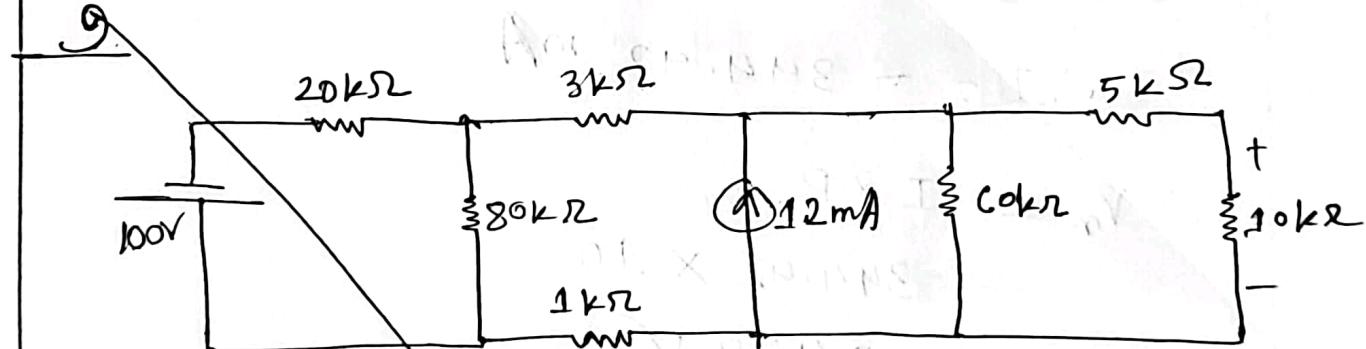


Step - 5

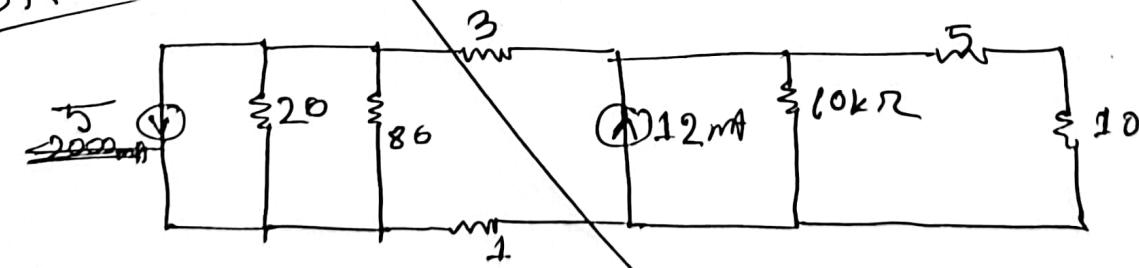


$$S_o, -60 + 15i_m + 25i_m - 2.5i_m = 0$$

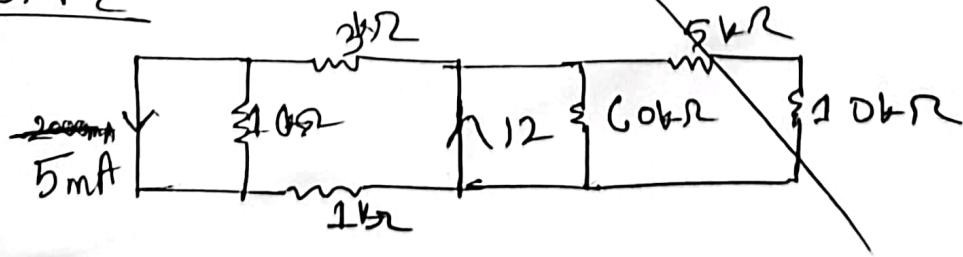
$$\therefore i_m = 1.6 \text{ A} \quad (\text{Ans})$$



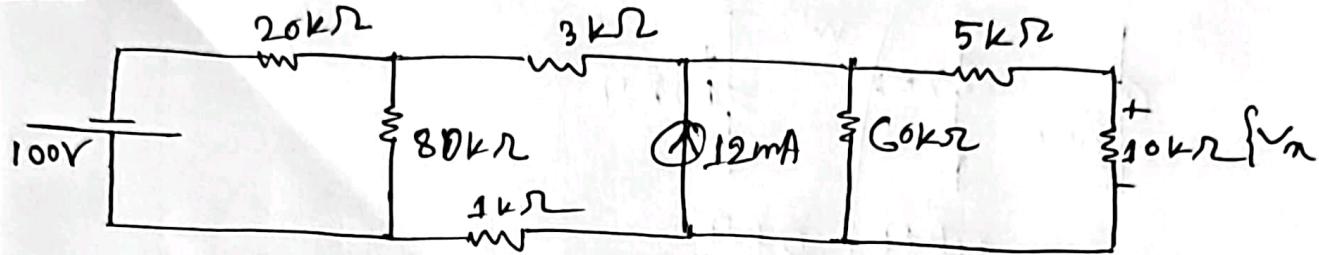
Step 1



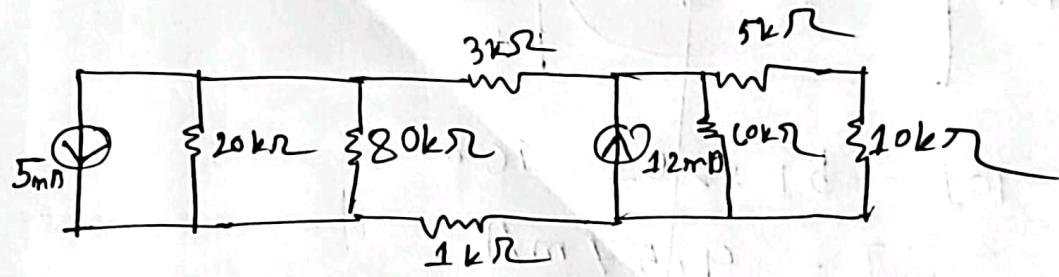
Step 2



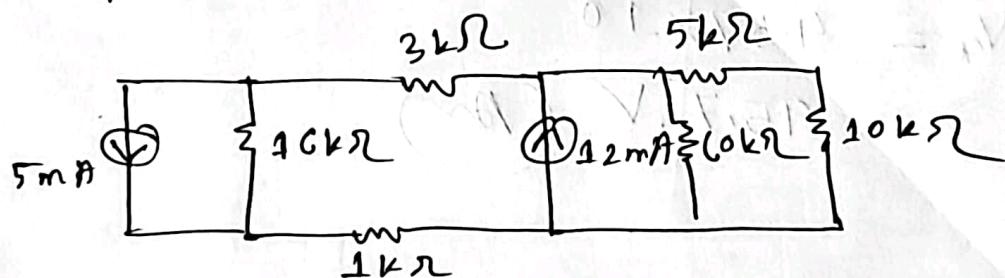
9



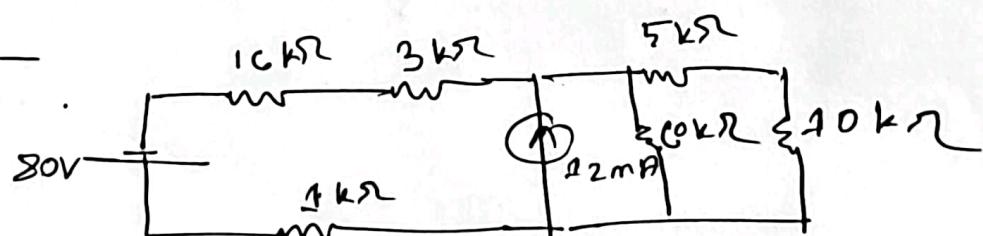
Step 1



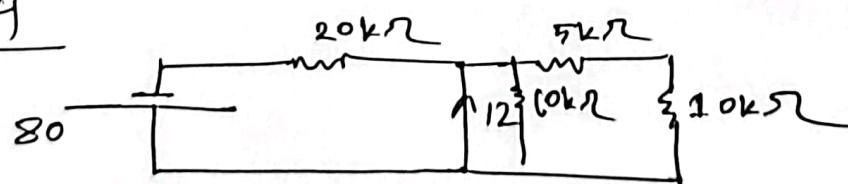
Step 2



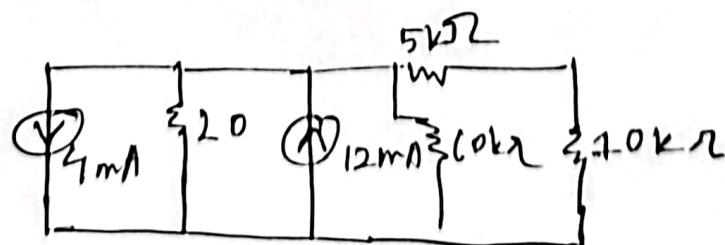
Step 3



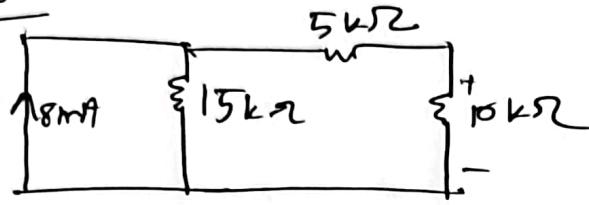
Step 4



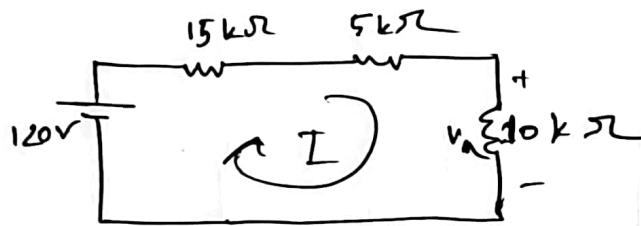
Step 5



Step 6



Step 7

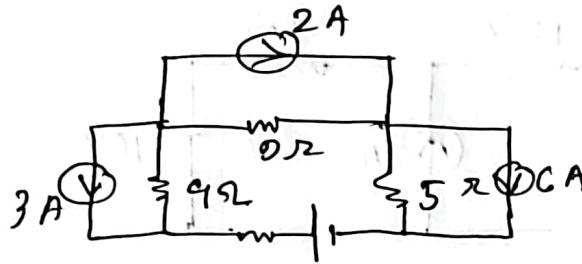
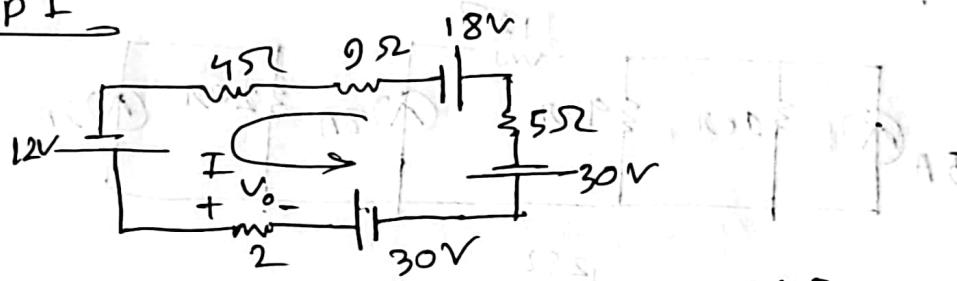


$$15I + 5I + 10I = 120$$

$$\therefore I = 4 \text{ mA}$$

$$\begin{aligned} \therefore V_m &= 4 \times 10 \\ &= 40\text{V} \quad (\text{Ans}) \end{aligned}$$

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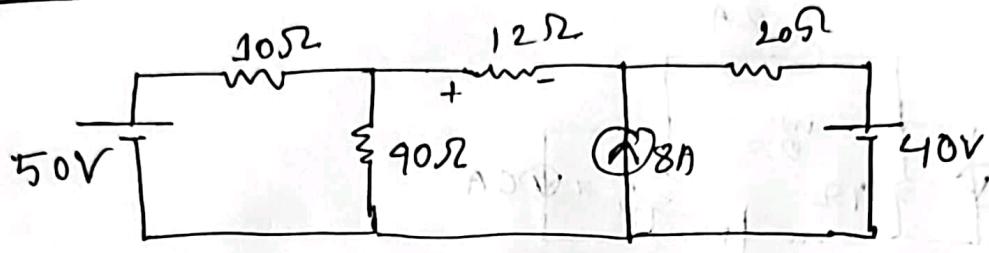
Step 1

$$-12 + 2I + 30 + 30 + 5I + 18 + 9I + 4I = 0$$

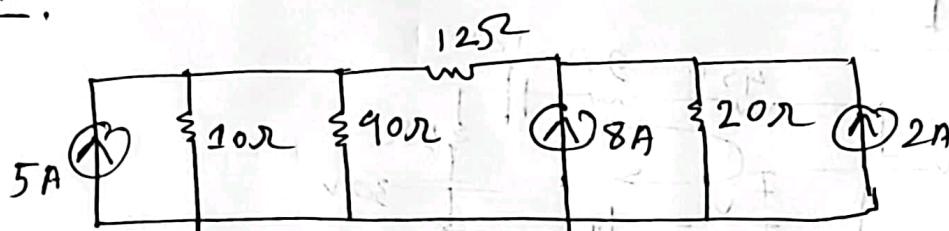
$$\therefore I = -3.3 \text{ A}$$

$$\begin{aligned} \therefore V_o &= IR_2 \\ &= -3.3 \times 2 \\ &= -6.6 \quad \checkmark \quad (\text{Ans}) \end{aligned}$$

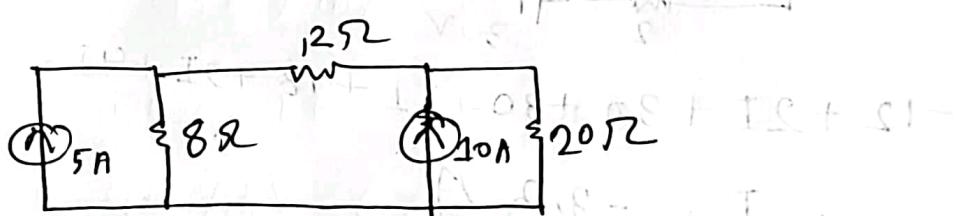
11



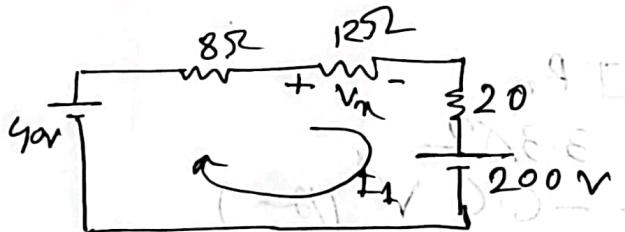
Step 1



Step 2



Step 3



$$8I_1 + 12I_2 + 20I_3 + 200 - 400 = 0$$

$$\therefore I_1 = -4 \text{ A}$$

$$\therefore V_m = -4 \times R_{12}$$

$$= -4 \times 12$$

$$= -48 \text{ V} \text{ (down)}$$