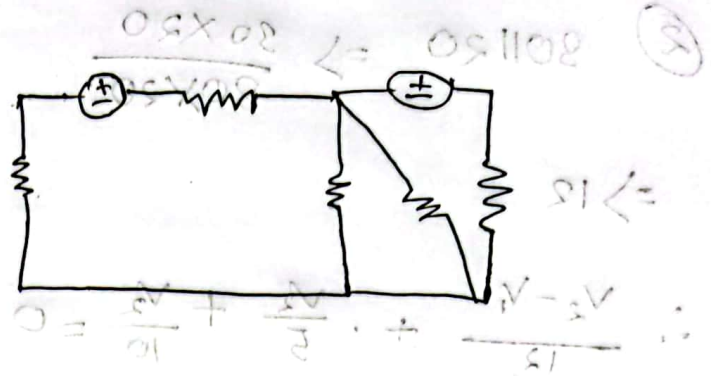
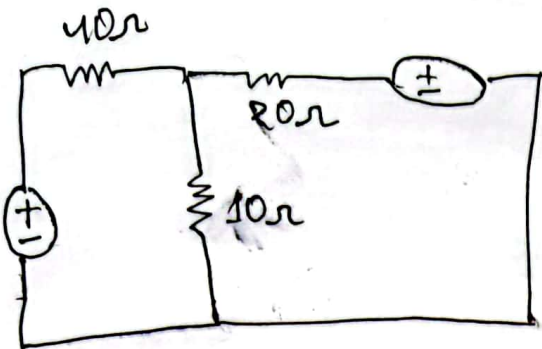


EEE

18-02-23



① $V_1 = -10v$ — ①

② $\frac{V_2 - V_1}{10} + \frac{V_2 - 10}{20} = 0$

$\Rightarrow \frac{2V_2 - 2V_1 + V_2 - 2}{20} = 0$

$\Rightarrow 3V_2 - 2V_1 = 20$ — ②

$V_1 = -10v$

$V_2 = 20v$

① $\Rightarrow \frac{V_1}{50} + \frac{V_1 - 20}{40} + \frac{V_1 - V_2}{30} = 0$

$\Rightarrow \frac{12V_1 + 15V_1 - 300 + 20V_1 + 20V_2}{600} = 0$

$\Rightarrow 47V_1 - 20V_2 = 300$ — ③

②
 $V_2 = 1.25V$
 $V_1 = 0.33V$

⇒

② $30 \parallel 20 \Rightarrow \frac{30 \times 20}{30 + 20}$

$\Rightarrow 12$

$\therefore \frac{V_2 - V_1}{12} + \frac{V_2}{5} + \frac{V_2}{10} = 0$

$\Rightarrow \frac{\Sigma V_1 - 5V_1 + 22V_2 + 6V_2}{60} = 0$

$\Rightarrow 23V_2 - 5V_1 = 0$

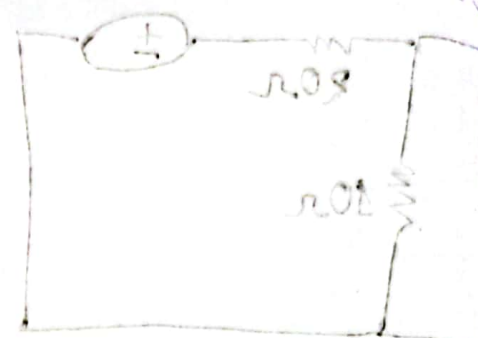
$\Rightarrow -5V_1 + 23V_2 = 0$ ———— (iii)

Analysis (i) and (ii)

$V_1 = 7.0336 \text{ V}$

$V_2 = 1.52 \text{ V}$

Ans



$0 = \frac{V_2 - V_1}{30} + \frac{V_2}{10} + \frac{V_2}{20}$

(ii) $0.5 = 50 = V_1 - 50$

$\frac{V_1}{20} + \frac{V_1 - 50}{30} + \frac{V_1 - 50}{10} = 0$

(i) $0.5 = 50 = V_1 - 50$