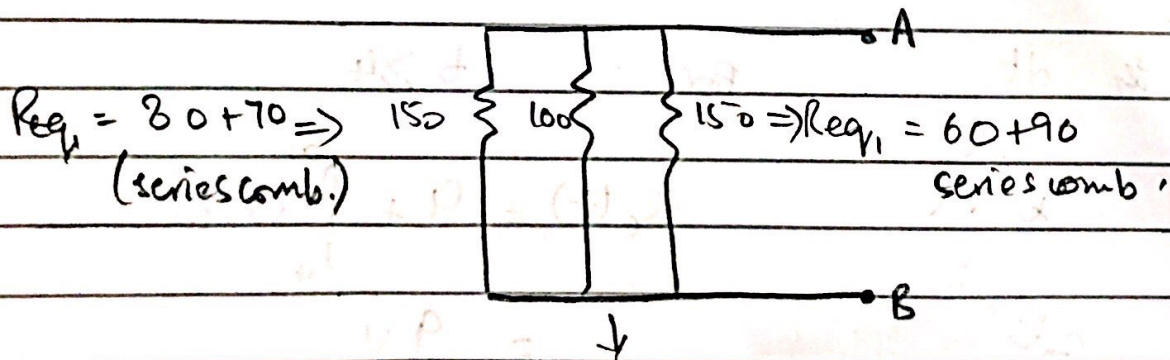
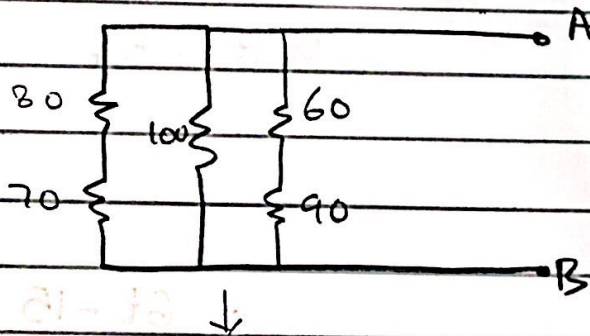


Q:2



$$R_{eq} = \frac{1}{\frac{1}{150} + \frac{1}{100} + \frac{1}{150}} = 42.85 \Omega$$

Quiz 01 - Solution Manual

Section 01

Q:1 By observing the graph:

$$i_c(t) = \begin{cases} 0 & t \leq 1 \\ 1 & 1 \leq t \leq 2 \\ 0 & 2 \leq t \leq 3 \\ 2 & 3 \leq t \leq 4 \\ 0 & t \geq 4 \end{cases}$$

And we know that:

$$i_c(t) = \frac{dV_c}{dt} \\ \Rightarrow V_c(t) = V_0 + 3 \int_0^t i_c(t) dt$$

For $t < 1$

$$V_c(t) = 0 + 3 \int_0^1 0 dt \\ = 0V$$

For $3 \leq t < 4$

$$V_c(t) = 3 + 3 \int_3^t 2 dt \\ = 6t - 15$$

For $1 \leq t < 2$

$$V_c(t) = 0 + 3 \int_1^t 1 dt \\ = 3t - 3$$

For $t \geq 4$

$$V_c(t) = 9 + \int_4^{\infty} 0 dt \\ = 9V$$

For $2 < t < 3$

$$V_c(t) = 3 + 3 \int_2^3 0 dt \\ = 3V$$