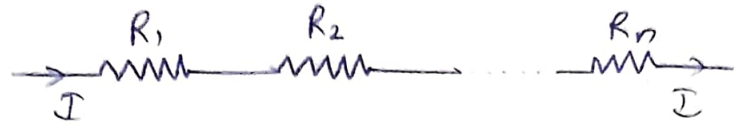
Resistance

Series :



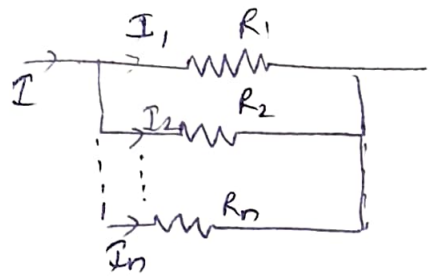
Current I is same

$$V = V_1 + V_2 + \cdots + V_n$$

$$IR_{eq} = IR_1 + IR_2 + \cdots\cdots + IR_n$$

$$\therefore R_{eq} = R_1 + R_2 + \cdots + R_n$$

Parallel :



V is same

$$I = I_1 + I_2 + \cdots\cdots + I_n$$

$$\frac{V}{R_{eq}} = \frac{V}{R_1} + \frac{V}{R_2} + \cdots + \frac{V}{R_n}$$

$$\frac{1}{R_{eq}} = \frac{1}{R_1} + \frac{1}{R_2} + \cdots\cdots + \frac{1}{R_n}$$