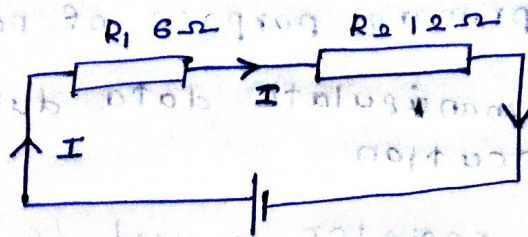


Tutorial 06

(01)

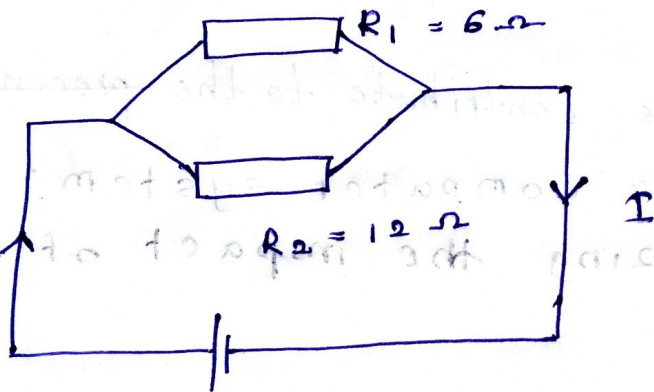


$$V = IR$$

$$R = R_1 + R_2 = 12\Omega + 6\Omega = 18\Omega$$

$$V = IR$$

$$V = \frac{V}{A} \approx V = 1A \times 18\Omega = \underline{\underline{18V}}$$



$$\frac{1}{R} = \frac{1}{R_1} + \frac{1}{R_2} = \frac{1}{6} + \frac{1}{12} = \frac{2+1}{12} = \frac{3}{12}$$

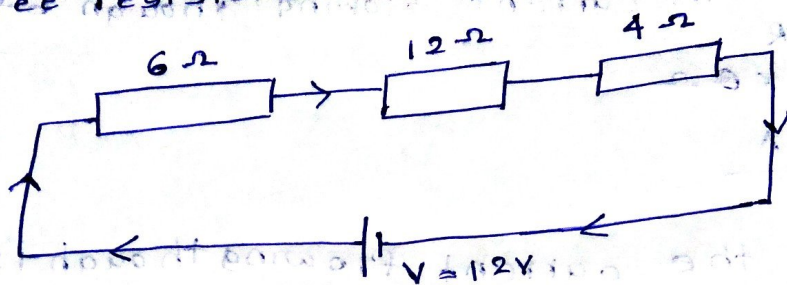
$$= R = 4\Omega$$

$$V = IR$$

$$V = 1A \times 4\Omega = \underline{\underline{4V}}$$

(02) Three resistors $6\ \Omega$, $12\ \Omega$ and $4\ \Omega$ are connected in series to an electronic supply of 12 V .

(i) Calculate the total resistance of these three resistors;



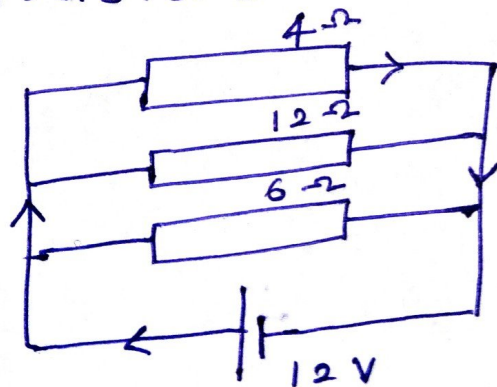
$$R = R_1 + R_2 + R_3 \\ = 6 + 12 + 4 = 22\ \Omega$$

(ii) Calculate the current,

$$V = IR \\ I = \frac{V}{R} = \frac{12\text{ V}}{22\ \Omega} = 0.54\text{ A}$$

(03) Three resistors $4\ \Omega$, $12\ \Omega$ and $6\ \Omega$ are connected to a supply of 12 V as shown below.

(i) Calculate the total resistance of these three resistors



$$\frac{1}{R} = \frac{1}{4} + \frac{1}{12} + \frac{1}{6} = \frac{3+1+2}{12} = \frac{6}{12} = \frac{1}{2}$$

$$R = 2\ \Omega$$

(ii) What current is gained from the electric supply?

$$V = IR$$

$$I = \frac{V}{R} = \frac{12}{2} = \underline{\underline{6A}}$$

(iii) Calculate the current flowing through 6Ω .

$$V = IR$$

$$12 = I \times 6\Omega$$

$$\underline{\underline{I = 2A}}$$

(iv) What is the current flowing through 12Ω ?

$$V = IR$$

$$I = \frac{V}{R} = \frac{12V}{12\Omega} = \underline{\underline{1A}}$$

(v) What is the current flowing through 4Ω ?

$$V = IR$$

$$I = V/R = \frac{12V}{4\Omega} = \underline{\underline{3A}}$$

