



Let  $V$  is applied potential,  
The current  $I$  divided  
into three part,  $I_1$ ,  $I_2$ ,  $I_3$

Acc to Ohm law

$$V = IR, \quad I = \frac{V}{R}$$

$$I_1 = \frac{V}{R_1}, \quad I_2 = \frac{V}{R_2}, \quad I_3 = \frac{V}{R_3}$$

$$\therefore I = I_1 + I_2 + I_3$$
$$\frac{V}{R_p} = \frac{V}{R_1} + \frac{V}{R_2} + \frac{V}{R_3}$$

$$\boxed{\frac{1}{R_p} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}}$$

Advantage of Parallel 1-

- 1) If any one appliance is fuse in parallel arrangement then other will properly. Because each resistance have different amount of current.

Imp

Ques Why domestic circuit arrange in parallel arrangement?

A Copper wire have resistance  $R$   
Cut into four Equal part.

Then find resistance if these  
part Connected in parallel  
Connected in parallel

$$[ (i) R, (ii) \frac{R}{16} ]$$

## Heating Effect OF Electric Current :-

The production of heat in a  
Conductor due to flow of Electric  
Current through it is called  
heating effect of electric current

$$W = It \times V$$

$$W = It \times IR \quad [V = IR]$$

$$W = I^2 RT$$

Workdone is Equal to Heat Produced  
by Conductor

$$= H = I^2 RT$$