Answer on Question #52272-Physics-Other

What current does the 1000 watts light bulb draw from 240 V mains

4.17kW

4.17 mm

4.17 ohms

4.17A

Solution

$$I = \frac{P}{U} = \frac{1000\ w}{240\ V} = 4.17A.$$

Answer: 4.17A.

7 How much current is drawn from a 240 V- mains by an appliance whose power rating is 130W?

0.54 A

1.85 A

0.36 A

2.12 A

Solution

$$I = \frac{P}{U} = \frac{130W}{240V} = 0.54\ A.$$

Answer: 0.54 A.

8 Calculate the fuse rating for a fuse which is required to protect an appliance whose power rating is 1.2 kW and operated on a 240 V- mains given that the fuse rating is 120 per cent of the calculated current

13A

6A

16A

2A

Solution

$$I = \frac{P}{U} = \frac{1.2\ kW}{240V} = 5A.$$

$$I_{fuse} = 1.2I = 6A.$$

Answer: 6A.

9 Calculate the total load on the circuit to which 30 light bulbs each of 120W, 20 fans each of 90W and 2 Air conditioner each of 1.5kW are connected and runs on a 240 V mains

11.2 kW

5.3 kW

3.8 kW

8.4 MW

Solution

$$P_{tot} = 20 \cdot 100\text{W} + 10 \cdot 90\text{W} + 2 \cdot 1.2\text{kW} = 5.3\text{kW}.$$

Answer: 5.3 kW.

10 A geyser with power rating of 2.5 kW is running on a 240 V - mains. Calculate the resistance to the flow of current offered by the geyser

23.04 ohms

16.80 ohms

36.15ohms

8.24 ohms

Solution

$$R = \frac{U^2}{P} = \frac{(240 \text{ V})^2}{2.5 \text{ kW}} = 23.04 \; ohms.$$

Answer: 23.04 ohms.