Answer on Question #52267-Physics-Other

Calculate the power of an electric fan which operates normally on a 240 - volts mains when drawing	g a
current of 13A	

3.12kW

4.24kW

1.43W

340W

Solution

$$P = UI = 240V \cdot 13A = 3.12 \, kW.$$

Answer: 3.12kW.

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

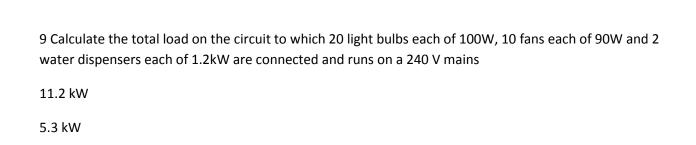
2A

Solution

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

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

Answer: 6A.



Solution

18.4 MW

3.8 kW

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

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

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

Answer: 23.04 ohms.

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