Science

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Question 1:

What determines the rate at which energy is delivered by a current?

Answer 1:

The rate of consumption of electric energy in an electric appliance is called electric power. Hence, the rate at which energy is delivered by a current is the power of the appliance.

Question 2:

An electric motor takes 5 A from a 220 V line. Determine the power of the motor and the energy consumed in 2 h.

Answer 2:

Power of the electric motor is given by

 $\mathbf{P} = \mathbf{V}\mathbf{I}$

Where, V = 220 V and I = 5 A

So, Power $P = 220 \times 5 = 1100 W$

Now, the energy consumed = $Power \times time$

Where, P = 1100 W

t = 2 hours $= 2 \times 60 \times 60$ seconds = 7200 seconds

So, the energy consumed $E = 1100 \times 7200 \text{ J} = 7920000 \text{ J}$

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