PQ 3d

Questions

Q1

A 110-volt toaster oven draws a current of 6 amps on its highest setting as it converts electrical energy into thermal energy. What is the toaster's maximum power rating?

Q2

An electric iron operating at 120 volts draws 10 amperes of current. How much heat energy is delivered by the iron in 30 seconds?

Q3

One watt is equivalent to one

Q4

A potential drop of 50 volts is measured across a 250-ohm resistor. What is the power developed in the resistor?

Q5

A driving lamp fitted to a car is specified as a 100 W, 12.0 V lamp. Calculate

(a) the current flowing through the lamp, and

(b) the resistance of the lamp.

Q6

An electric motor found in a child's toy requires two 1.50 V dry cell batteries to be connected in series. If the motor draws a maximum current of 300 mA calculate

(a) the resistance of the motor, and

(b) the maximum power consumption of the toy.

Q7

A Christmas tree is decorated by a string of 16 light globes which are connected in series to a mains outlet of 240 V. If the total power consumption is 24.0 W, calculate the

(a) potential difference across each light globe, and

(b) resistance of each light globe.

Q8

Charles wishes to connect a number of 75.0 W, 240 V coloured party light globes around his patio. How many globes can he use without blowing a 10.0 A fuse when he turns the light globes on?