Electricity-MCQs

1.If R_1 and R_2 are respectively the filament resistances of a 200-watt bulb and a 100-watt bulb which designed to operate on the same voltage then:

a) $R_1=2\ R_2$
b) $R_2=2\ R_1$
c) $R_2=4R_1$
d) $R_1=4\ R_2$

2.If 600C of electric charge flows through a circuit, what will be the current drawn by the filament of an electric bulb in 10 minutes?

a) 0.5 A
b) 1 A
c) 1.5 A
d) 2 A

3.A bulb draws a current of 0.22 A from a 220V source. WΩhat is the resistance of the filament of the bulb?

a) 1000 Ω
b) 10,000 Ω
c) 15,000 Ω
d) 20,000 Ω

4.What will be the heat produced each second in a 4 Ω resistance connected across a potential difference of 20 V?

a) 50 J
b) 75 J
c) 100 J
d) 125 J

5.An electric fan rated 50 W operates 20 hours a day. What is the cost of the energy to operate it for 30 days at Rs 2 per kWh?

a) Rs 50
b) Rs 60
c) Rs 70
d) Rs 80

6.Two resistors 2R and R are connected in series in an electric circuit. The ratio of heats dissipated in 2R to that in R is

a) 1:2
b) 2:1
c) 4:1
d) 1:9

7.An electric bulb is rated 220 V and 100 W. Power consumed by it when operated on 110 V is

a) 50 W
b) 75 W

c) 90 W
d) 25 W

8.An example of a non ohmic resistance is

a) Copper Wire
b) Carbon Resistance
c) Diode
d) Both b and c

9.Two resistors of 4 Ω and 6 Ω are connected in parallel. The combination is connected across a 6V battery of negligible resistance. What is the current flowing through the battery?

a) 1 A
b) 1.5 A
c) 2 A
d) 2.5 A

10.A certain piece of copper is to be shaped into a conductor of minimum resistance. Its length and diameter should be respectively

a) l, d
b) 2l, d
c) l/2, 2d
d) 2l, d/2

11.What is irrelevant for an electric fuse?

a) Specific resistance
b) Radius
c) Length
d) Current flowing through it

12.An heater element in an electric iron is made of

a) Nichrome
b) Iron
c) Constantan
d) Tungsten

13.There are two bulbs in a house. One glows brighter than the other. Which of the wo bulbs has a higher resistance?

a) The brighter bulb
b) The dim bulb
c) Both bulbs have same resistance
d) The brightness of bulb is not linked with its resistance

14.A current passing through a wire into the filament of a bulb makes it glow, but the wire does not glow because

a) The wire has less resistance than filament
b) The wire has more resistance than filament
c) Less current flows in the wire than in the filament

d) None of these

15.The smallest resistance that can be obtained from a combination of 'n' identical resistors each of resistance R is

a) R/n
b) R/n^2
c) nR
d) n^2R

16. A wire of 36 Ω resistance is cut into n equal pieces and joined in parallel. The effective resistance is 1 Ω. The value of n is

a) 6
b) 9
c) 12
d) 15

17.Three resistances form a triangle ABC. If the resistances in AB, BC and AC are 20 Ω, 30 Ω and 50 Ω, the equivalent resistance across AC will be

a) 50 Ω
b) 80 Ω
c) 40 Ω
d) 25 Ω

18.Two bulbs of wattage 40 W and 100 W are connected in series to a 200 V line Then

a) The potential drop across both the bulbs is 200 V
b) The potential drop across both the bulbs is same but not 200V
c) The potential drop across 100 W is more
d) The potential drop across 40 W is more.

19.Two bulbs A and B are rated 100 W,120 V and 10 W,120 V respectively. They are connected in parallel across a 120 V source. Find the current in each bulb. Which bulb will consume more enery?

a) 0.065 A
b) 0.073 A
c) 0.083 A
d) 0.094 A

20.Two heater coils each rated at 1000W-220V are connected in series to a 440 volts line. What will be the total power consumption?

a) 500 W
b) 1000 W
c) 1500 W
d) 2000 W