**Aarambh Classes**

**Class X**

**Physics worksheet**

**Electricity**

1 mark questions :

1. State ohm’s law .
2. How is the resisitivity of alloys different compared with those of pure metals from which they may have been formed ?
3. If a person has five resisitors each of value ,then the maximum resistance he can obtain by connecting them is :

(a) 1 (b) 5 © 10 (d) 25

4. The maximum resistance which can be made using four resistors each of 2 is

(a) 2 (b) 4 © 8 (d) 16

5. The maximum resistance which can be made using four resistors each of resistance is

(a) 2 (b) 1 © 2.5 (d) 8

6. The resistance of aresistor is reduced to half of its initial value .In doing so ,if other parametres of the circuit remain unchanged ,the heating effects in the resistor will become

1. Two times (b) half © one-fourth (d) four times

7. Two bulbs of 100 W and 40W are connected in series .The current through the 100W bulb is 1 A . The current through the 100 W bulb is 1 A .The current through the 40W bulb will be

(a) 0.4 A (b) 0.6 A © 0.8A (d) 1 A

8. Power of a lamp is 60W . Find the energy in joules consumed by it in 1 s .

9. When a 4V battery is connected across an unknown resistor there is a current of 100 mA in the circuit .The value of the resistance of the resistor is

(a) 4 (b) 40 © 400 (d) 0.4

10. Unit of elctric power may also be expressed as

(a) volt ampere (b) kilowatt hour (C)watt second (d) joulesecond

**2 marks questions :**

11. (a) define 1 ohm .

(b) what is the resistance of a conductor through which a current of 0.5 A flows when a potential difference of 2 V is applied across its ends ?

12. Calculate the resistance of a metal wire of length 2 m and area of crossection 1.55 x10 m ,if the ressistivity of the metal be 2.8 x 10 .

13. A student has two resistors 2 and 3.She has to put one of them in place of R as shown in the circuit .The current that she needs in the entire circuit is exactly 9 A . Show by calculation which of the two resistors she should choose ?

**3 marks questions** :

14. A wire has a resistance of 16.It is melted and drawn into awire of half its original length .Calculate the resistance of the new wire .What is the percentage change in its resistance ?

15. Show how would you join 3 resistors ,each of resistance 9 sothat the equivalent ressitance of the combination is (I) 13.5 (ii) 6 ?

16. (I)State Joule’s law of heating .Express it mathematically when an appliance of resistance R is connected to a source of voltage V and the current I flows through the appliance for a time t .

(ii) A 5 resistor is connected across a battery of 6 volts .Calculate the energy that dissipates as heat in 10s .

17. (I) Why are alloys preffered over pure metals to make the heating elemnts of electrical heating devices ?

(ii) An electric kettle of 2 kW is used for 2 h .Calculate the energy consumed in

(i)kilowatt hour

(ii)joules