

## Sub: Physics Assignment-4

### Objective type questions-

#### I. Multiple choice questions:-

1. When a battery of 4 V is connected across an unknown resistor, there is a current of 100 mA in the circuit. The value of resistance of the resistor is :  
(a) 4 ohm (b) 40 ohm (c) 400 ohm (d) 0.4 ohm
2. Unit of electric power may also be expressed as :  
(a) volt- ampere (b) kilowatt-hour (c) watt- second (d) joule- second
3. The resistivity of a conductor increases with:  
(a) Increase in temperature (b) increase in cross- sectional area (c) decrease in length (d) decrease in cross- sectional area
4. Three copper wires have lengths and cross- sectional areas as  $(l, A)$  ;  $(2l, A/2)$  ;  $(l/2, 2A)$ . Resistance is minimum in :  
(a) wire of cross- sectional area  $A/2$  (b) wire of cross sectional area  $A$  (c) wire of cross sectional area  $2A$  (d) same in all the three cases
5. A wire is drawn such that its radius changes from  $r$  to  $2r$ . The new resistance is :  
(a) 1 time (b) 4 times (c) 8 times (d)  $(1/16)$  times
6. If a wire is stretched to make its length three times, its resistance will become:  
(a) three times (b) one- third (c) nine times (d) one- tenth
7. In a circuit, current becomes half when resistance is :  
(a) removed (b) doubled (c) halved (d) none of the above
8. Three resistances 2 ohm, 4 ohm and 8 ohm are connected in series. Their equivalent resistance is:  
(a) 10 ohm (b)  $(8/7)$  ohm (c) 14 ohm (d) between 2 ohm and 8 ohm
9. Three resistances 2 ohm, 4 ohm and 8 ohm are connected in parallel. Their equivalent resistance is:  
(a) 10 ohm (b) 14 ohm (c)  $(8/7)$  ohm (d) between 2 ohm and 8 ohm
10. A wire of resistance 1 ohm is divided into two halves and both halves are

connected in parallel. The new resistance will be:

- (a) 1 ohm (b) 2 ohm (c) 0.5 ohm (d) 0.25 ohm

11. A cylindrical conductor of length  $L$  and uniform area of cross section  $A$  has resistance  $R$ . Another conductor of length  $2L$  and resistance  $R$  of same material has area of cross section :

- (a)  $A/2$  (b)  $3A/2$  (c)  $2A$  (d)  $3A$

12. What is the maximum resistance which can be made using five resistors each of  $(1/5)$  ohm ?

- (a)  $(1/5)$  ohm (b) 10 ohm (c) 5 ohm (d) 1 ohm

13. What is the minimum resistance which can be made using five resistors each of  $(1/5)$  ohm ?

- (a)  $(1/5)$  ohm (b)  $(1/25)$  ohm (c)  $(1/10)$  ohm (d) 25 ohm

14. Two resistors of resistances 2 ohm and 4 ohm when connected to a battery will have :

- (a) same current flowing through them when connected in parallel  
(b) Same current flowing through them when connected in series  
(c) Same potential difference across them when connected in series  
(d) Different potential difference across them when connected in parallel

15. Electrical resistivity of a given metallic wire depends upon :

- (a) Its length (b) its thickness (c) its shape (d) nature of the material

## II. Fill in the blanks:

16. The amount of charge that flows through a circuit carrying a current of 0.4 A for 3 h is .....

17. Potential difference between two points is equal to work done per unit .....

18. The alloy used for making the filament of bulb is .....

19. The resistance of a wire is ..... proportional to the square of its radius.

20. Two resistances of 2 ohm each are connected in parallel. The equivalent resistance is.....