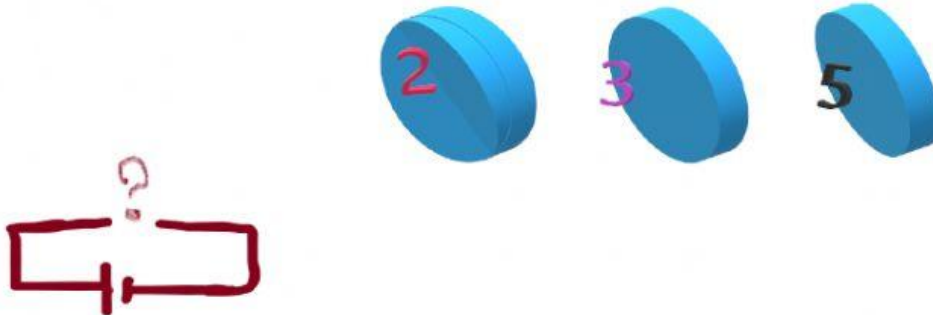# WORKSHEET

CURRENT ELECTRICITY

1) Three resistors have resistance 2,3 and 5Ω. Place the resistance in the circuit to get maximum power dissipation.

2) Read the following statements carefully:

Y =The resistivity of the semiconductor decreases with increase of temperature.

Z = in a conducting solid the rate of collision between free electrons and ions increases with increases of temperature.

Select the correct statement:

    (a) Y is true but Z is false.

    (b) Y is false Z is true

    (c) Both Y and Z true

    (d) Y is true and Z is the correct reason for Y.

3) Choose the correct statement/s.

When a potential difference is applied across, the current passing through

(a) an insulator at 0K is zero

(b) semiconductor at 0 K is zero

(c) a metal at 0 K is finite

(d) p-n junction at 300 K is finite, if it is reverse biased.

4) A steady current flow in a metallic conductor of non- uniform cross –section.

The quantities constant along the length of the conductor are

Current   Drift speed   Electric Field

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) The resultant resistance of _____ combination of resistors always smaller than the smallest Resistor. The resultant resistance of _____ combination of resistors always larger than the largest Resistor in the combination.

Series   **Parallel**

7) If the length of the conductor is doubled, the drift velocity of the electron becomes half.

8) If the potential difference across the conductor doubled at constant temperature mobility becomes_____

Doubled   **Becomes Half**   **No Change**

9) Drop the high resistance bulb here

120 W   100W   60 w   40 W

10) If the area of cross- section of a wire is doubled and length is halved, how does the resistivity of the wire vary? _____

Doubled   **Becomes Half**   **No Change**