Mid Term Assignment   **Name: Wajid ullah**

Subject Name: Applied Physics   **ID: 12995**

Class: BS SE-1, CS-1   **BS(SE -1)**

Instructor: M Khalid Hamid

Submission Date: 17/04/2020

Note: Attempt all Questions

Q1:

   a.   Discuss the significance of the knee of the characteristics curve in forward Bias?

   Ans): The significance of the knee of the characteristics in forward bias is the point which the barrier potential is overcome and current will increase rapidly.

   b. What happens to the barrier potential when the temperature increases?

   Ans): Barrier potential and temperature are inversely proportion when temperature increases barrier potential decreases.

Q2:

   a.   Compare the depletion regions in forward bias and reverse bias?

   Ans): Depletion region in forward bias is narrow compared to reverse bias the depletion region is wider.

   b.   When does reverse breakdown occur in a diode?

   Ans): The reverse current in a diode is normally very small. If the external bias voltage is increased so on, the reverse current increases drastically at a particular value of the reverse bias voltage. This particular value of the reverse bias voltage is known as breakdown voltage.

Q3:

a. Find the difference between electric potential energy and electric potential?

Ans): The difference between the two is is that Electric potential at a point in electric field is the amount of work done to bring the unit positive charge from infinity to that point, while electric potential energy is the energy that is needed to move a charge against the electric field.

c. How to find the potential difference between any two points in the electric field lines?

Ans): With the following equation we can find potential difference between any two points in electric field lines

$$V=Ed$$

Where V is potential difference

E is electric field strength in the area

And d is distance between the two plates