BE IMPORTANT QUESTIONS

1)a)i) Explain V-I characteristics of PN junction Diode.

ii)Define Diffusion current, Drift current and Cut-in voltage of Diode.

b) Derive the Diode Current equation.

2)a)Explain Breakdown mechanisms of a diode.

b)Determine the forward resistance of a PN junctiondiode,when the forward current is 5ma at T=300K.Assume silicon diode?

3)a)Explain the conductors,semiconductors and insulators with their energy band diagrams?

b)Explain the formation of p-type semiconductor?

4)a)Explain the formation of n-type semiconductor?

b)Explain the principle and operation of diode?

5)a)Explain the forward bias operation of diode?

b)A silicon diode has a reverse saturation current of 7.12nAat room temperature of 3400k.Calculate its forward current if it is forward biased with a voltage of 0.7v?

6)a) Explain the reverse bias operation of diode?

b) Explain how zener diode acts as a voltage regulator

7)a)Explain about the current components in a p-n junction diode?

b)The voltage across a silicon diode at room temperature (300k) is 0.7volts when 2ma current flows through it. If the voltage increases to 0.75v,calculate the diode current.(Assume

Vt=26mv)?

8)a)Explain the diode equation and also V-I characteristics of diode?

b)Find the value of dc resistance and ac resistance of a Germanium junction diode at 298k with Io=25microamp and at an applied voltage of 0.2v forward bias is applied at room temperature?

9)a)Draw Zener Diode Characteristics and explain its operation?

b) Explain the working of What is tunnelling phenomena? Explain the principle of operation of tunnel diode with its characteristics?

**10)a)i)Write two characteristic feature to distinguish between n-type and p-type semiconductors.**

**ii) Draw energy band diagram of a p-type and n-type semiconductor.**

b)A silicon diode has a saturation current of 7.5microamps at room temperature 300k.Calculate the saturation current at 400k?

11)a)Explain the characteristics of diode with respect to temperature?

b)Write the differences between ideal diode and practical diode?Explain the static or DC resistance?

12)a)Explain the dynamic or AC resistance?

b)Explain the principle and operation of varactor diode?