PN JUNCTION

Multiple Choice Questions (MCQs)

1. When the PN junction is forward biased the sequence of events that take place are :
   a. Diffusion, drift and recombination.
   b. Injection, diffusion and recombination.
   c. Diffusion, injection and drift.
   d. None of the above.

2. The depletion region of PN junction is one, that is depleted of
   a. Atoms
   b. Mobiles charges
   c. Immobile charges
   d. Velocity of the carriers

3. The depletion region within a PN junction is reduced when the junction has:
   a. Zero bias
   b. Forward bias
   c. Reverse bias
   d. All of these

4. A silicon PN junction in forward conduction has a voltage drop closer to
   a. 0.1 V
   b. 0.7 V
   c. 1.7V
   d. 2.1V

5. For a reverse biased PN junction, the current through the junction increases abruptly at
   a. Breakdown voltage
   b 0 V
   c. 0.2 eV
   d. 7.2 eV

6. The reverse saturation current of a PN junction varies with temperature (T) as
   a. T
   b. 1/T
   c. Independent of T
   d. T^2

7. The transition capacitance of a reverse biased PN junction having uniform doping on both sides, varies with junction voltage (V_B) as
   a. $1/V_B$
   b. V_B
   c. $V_B^{-1/2}$
   d. V_B^2

8. The leakage current of a PN junction is caused by
   a. Heat energy
   b. Chemical energy
   c. Barrier potential
   d. Majority carriers

9. The junction capacitance of linearly graded junction varies with the applied reverse bias, V_R as
   a. V_R^{-1}
   b. $V_R^{-1/2}$
   c. $V_R^{-1/3}$
   d. $V_R^{1/2}$

10. The diffusion capacitance of a forward biased P^+N junction diode with a steady current I depends on
   a. Width of the depleted region
   b. Mean life-time of the holes
   c. Mean life-time of the electrons
   d. Junction area

   (A P^+N junction diode is a diode with very heavily doped P region)

Answers

1.	(b)	2.	(b)	3.	(b)	4.	(b)
5.	(a)	6.	(a)	7.	(c)	8.	(a)
9.	(c)	10.	(c)				