

For More Questions [Click Here](#)

1. The p-region has a greater concentration of _____ as compared to the n-region in a P-N junction.

- a) holes
- b) electrons
- c) both holes & electrons
- d) phonons

View Answer

Answer: a

Explanation: Holes are the majority charge carriers in p-type material.

2. A p-type semiconductor material is doped with _____ impurities whereas a n-type semiconductor material is doped with _____ impurities

- a) acceptor, donor
- b) acceptor, acceptor
- c) donor, donor
- d) donor, acceptor

View Answer

Answer: a

Explanation: Donor impurities donate an electron to the n-type material making it a electron majority carrier & vice-versa.

3. In the p & n regions of the p-n junction the _____ & the _____ are the majority charge carriers respectively.

- a) holes, holes
- b) electrons, electrons
- c) holes, electrons
- d) electrons, holes

View Answer

Answer: c

Explanation: Holes are the majority charge carriers in p-type material & vice-versa.

4. The n-region has a greater concentration of _____ as compared to the p-region in a P-N junction diode.

- a) holes
- b) electrons
- c) both holes & electrons
- d) phonons

View Answer

Answer: b

Explanation: Electrons are the majority charge carriers in n-type material.

5. Which of the below mentioned statements is false regarding a p-n junction diode?

- a) Diode are uncontrolled devices
- b) Diodes are rectifying devices

- c) Diodes are unidirectional devices
- d) Diodes have three terminals

View Answer

Answer: d

Explanation: Diode is a two terminal device, anode & cathode are the two terminals.

6. In the p & n regions of the p-n junction the _____ & the _____ are the minority charge carriers respectively.

- a) holes, holes
- b) electrons, electrons
- c) holes, electrons
- d) electrons, holes

View Answer

Answer: d

Explanation: Holes are the minority charge carriers in n-type material & vice-versa.

7. Lets assume that the doping density in the p-region is 10^{-9} cm^{-3} & in the n-region is 10^{17} cm^{-3} , as such the p-n junction so formed would be termed as a

- a) $p^- n^-$
- b) $p^+ n^-$
- c) $p^- n^+$
- d) $p^+ n^+$

View Answer

Answer: b

Explanation: Doping density is greater in the p-region compared to the n-region.

8. When a physical contact between a p-region & n-region is established which of the following is most likely to take place?

- a) Electrons from N-region diffuse to P-region
- b) Holes from P-region diffuse to N-region
- c) Both of the above mentioned statements are true
- d) Nothing will happen

View Answer

Answer: c

Explanation: When p & n region come together diffusion takes place & a depletion region is established with opposite charges on both the sides of the junction.

9. Which of the following is true in case of an unbiased p-n junction diode?

- a) Diffusion does not take place
- b) Diffusion of electrons & holes goes on infinitely
- c) There is zero electrical potential across the junctions
- d) Charges establish an electric field across the junctions

View Answer

Answer: d

Explanation: A potential difference is established across the junctions due to recombination of holes & electrons. This growing field (barrier potential) stops the further diffusion.

10. Which of the following is true in case of a forward biased p-n junction diode?

- a) The positive terminal of the battery sucks electrons from the p-region
- b) The positive terminal of the battery injects electrons into the p-region
- c) The negative terminal of the battery sucks electrons from the p-region
- d) None of the above mentioned statements are true

View Answer

Answer: a

Explanation: The diode is forward biased, positive is connected to p & vice-versa, as such battery provides EMF to drive electrons from n-region to p-region.