

Semiconductors

1. What is a semi conductor?
2. What are the uses of a semiconductor?
3. What is an intrinsic semiconductor?
4. What is an extrinsic semiconductor?
5. What is an n-type semiconductor?
6. What is a p-type semiconductor?
7. What is the nature of the charge carriers on :
 - a. N-type semi conductors
 - b. P-type semiconductors
 - c. Why is the junction important? Couldn't we just simply remove it?
8. Draw , label and explain how charge flows through the p –n junction diode
9. Draw the Current vs. Voltage graph of a typical silicone diode
 - a. What is leakage current?
 - b. What is the turn on voltage?
 - c. What is the break down region, what happens to the diode at this point?
 - d. Why would we not want to allow excessive current to flow through a diode?
10. What materials could we make semiconductors from? List six.
11. In relation to semiconductors, what is an acceptor impurity?
12. In relation to semiconductors, what is a donor impurity?
13. Explain the rectifying action of a p-n junction diode.
14. Draw a graph and a circuit to explain half wave rectification.
15. When smoothing is introduced, what happens to the graph for half wave rectification? Draw the resultant graph.
16. Draw a graph and a circuit to explain full wave rectification.
17. When smoothing is introduced, what happens to the graph for full wave rectification? Draw the resultant graph
18. Explain Forward bias in relation to a diode.
19. Explain reverse bias in relation to a diode.