

Physics

Test Topic 4

1. What is meant by “depletion layer” in a p-n junction diode?
2. Draw the symbol of a p-n junction diode. State one application of the diode.
3. Use circuit diagrams to distinguish between forward and reverse bias of a p-n junction diode.
4. A transistor is connected in a common-emitter mode:
 - a. Why is the input voltage necessary?
 - b. How does the current flow in the input circuit affect the output current.
5. List the applications of operational amplifiers.
6. Define Transistors.
7. What are the Applications of p-n junction diodes?
8. Explain the following terms:
 - a. semi-conductors.
 - b. extrinsic semi-conductors.
 - c. intrinsic semi-conductors.
 - d. Doping
9. Distinguish between semi-conductors and conductors. Give an example of each.
10. Describe how the following semi-conductors are made:
 - a. p-type
 - b. n-type
11. Draw the structure of a silicon crystal and show the bonding of electrons.
12. Explain the statement, ‘at low temperatures the resistance of silicon is high, but decreases at high temperatures.’