1. Describe the formation of energy bands in solids.
2. Define bands in solids
3. Explain the energy band structure in Sodium, Lithium, Beryllium, Diamond, Silicon, Germanium etc.
4. Define valence band, conduction band and forbidden gap.
5. Differentiate solids according to energy band structure.
6. Explain the energy band formation and hence classification of solids based on energy bands. What are metals, insulators and semiconductors?
7. Define semiconductors. What are their characteristics properties?
8. What do you mean by semiconductors? Explain the term intrinsic and extrinsic semiconductors
9. Why does the electrical conductivity of a pure semiconductor increase with a rise of temperature? Mention a device where this property is used.
10. Explain clearly the meaning of hole as referred to in a semiconductor. What is meant by an intrinsic and an extrinsic semiconductor? Is an n-type semiconductor negatively charged?
11. Explain the process of recombination of electrons and holes in a semiconductor. If the electron-hole pairs recombine, how can their concentration remain constant at a particular temperature?
12. What are extrinsic semiconductors? How can they be formed?
13. Define the following terms: (a) Doping, (b) Dopant, (c) Donors, (d) Acceptors, (e) n-type semiconductors, and (f) p-type semiconductors.
14. Discuss the properties of n-type and p-type semiconductors.