## **Semiconductors - Overview**

- 1. Define and differentiate conductors, insulators and semiconductors.
- 2. Classification of semiconductors intrinsic and extrinsic
- 3. Types of extrinsic semiconductors n type and p type
- 4. Discuss the position of acceptor level (band) in p type and donor level (band) in n type.
- 5. Ways to increase conductivity of intrinsic semiconductors raise temperature, doping
- 6. What is Fermi level and Fermi energy
- 7. Prove that Fermi level lies in the middle of energy gap in intrinsic semiconductors
- 8. Dependence of Fermi level on temperature and carrier concentration
- 9. Position of Fermi level in n type and p type semiconductors
- 10. Discuss carrier generation and carrier recombination
- 11. Discuss briefly pn junction
- 12. Discuss diffusion current, formation of depletion layer, depletion width, and drift current
- 13. Brief introduction to LED and Solar cell.