Section 2

1. Discuss the process of band formation in materials. How the band gap is important for solar energy conversion
2. How is the band structure of semiconductors different from that of metals and semiconductors? Describe a few methods for band gap modulation
3. Describe the importance of heterojunctions and discuss the various types of heterojunctions and their importance
4. Illustrate the structure and operating principle of a p-n junction photovoltaic cell. Mention a few device limitations.
5. What is the importance of semiconductor selection in solar devices? Mention a few names of different semiconductors and various applications.
6. How transparent substrates are important in solar cells. Mention a few transparent conducting substrates
7. Depict the structure of p-n junction Silicon solar cell, Perovskite solar cell and Dye-sensitized solar cell with appropriate labelling. Compare their efficiencies
8. Discuss the importance of metal oxide semiconductors (MOS) and polymer semiconductors.
9. Discuss the importance and applications of transparent conducting substrates.
10. What are the importance and advantages of thin films in photovoltaics?