

**Indian Institute of Information Technology, Design and
Manufacturing, Kancheepuram**

Assignment 1

Physics of Materials (PHY2002)



Unit I

- 1) Explain the different types of atomic bonding with examples.
- 2) Describe the free electron theory.
- 3) Differentiate between conductor, semiconductor, insulator, and superconductor using band theory.
- 4) Describe the types of semiconductors with examples.

Unit II

- 1) How the optical, electrical, and magnetic properties of material changes when material is converting from bulk to Nano size?
- 2) Compare the advantages and disadvantages of Top-down and Bottom-up approaches.
- 3) Explain any two-synthesis process of nanomaterials in Top-down and Bottom-up process with diagram.
- 4) Describe the application of nanomaterials in Drug delivery system.