Fundamentals of Electronics Devices

Unit-3 Lecture-1

Junction Properties

- Equilibrium conditions.
- Biased junctions.
- Steady state conditions.
- Reverse bias break down.
- Transient and AC conditions.
- Metal semiconductor junctions.

Introduction

- Most semiconductor devices contain at least one junction between p-type and n-type material.
- These p-n junctions are fundamental to the performance of functions such as rectification, amplification, switching and other operations in the electronic circuits.

 In this unit we shall discuss the equilibrium state of the junction and the flow of electrons and holes across a junction under steady state and transient conditions.

- This is followed by a discussion of metalsemiconductor junctions and hetero-junctions between semiconductors having different band gaps.
- With the background provided in this unit on junction properties, we can then discuss specific devices in last unit.