Marwadi University

Bachelor of Technology
Information and Communication Technology
Basics of Electronics Engineering (01EC0101)

# Session Handout-Semiconductors
# CO-1

Q-1 Draw the atomic structure of Si atom. Consider a crystal with only Si atoms, draw the covalent bonding and indicate the covalent bond.

Q-2 What is the meaning of intrinsic semiconductor and extrinsic semiconductor?

Q-3 Draw the energy band diagram for intrinsic Si atoms when bounded together.

Q-4 Draw the energy band diagram for N-type semiconductor material and briefly explain that why do we have free electrons at room temperature?

Q-5 Draw the energy band diagram for P-type semiconductor material and briefly explain its effect at room temperature?

Q-6 What happens when we combine P-type semiconductor and N-type semiconductor? Explain the phenomena in your own words.

Q-7 What do you understand by the term open circuit PN junction?

Q-8 What is the meaning of barrier potential in open circuit PN junction? Can we measure it with multimeter? Why?

Q-9 What is the meaning of depletion region? Write in your own words.

Q-10 What is the meaning of biased PN junction? Draw different types of possible biased conditions of PN junction and briefly explain its effect on depletion region.