

Department of Electronics & Communication Engineering
Faculty of Engineering, Integral University, Lucknow

Assignment Sheet 1

Basic Electronics (IEC-101/201)

Due Date :

Problems : 6

Q1. With the help of band diagram explain semiconductor , conductors and insulators.

Q2. Write Short Notes on the following-

- (i). Mass Action Law
- (ii). Fermi Level for N-type & P-type Semiconductor.
- (iii).LED
- (iv). Schottky Diodes

Q3. Explain Hall Effect, Derive the expression for Hall Voltage (V_H) in terms of Hall Coefficient (R_H) and discuss its applications.

Q4. What is a Rectifier Circuit? Explain Half Wave and Full Wave Rectifier and derive expressions for Average Value, RMS Value, Ripple Factor and Efficiency for each of them.

Q5. What is P-N junction diode? Explain the formation of the “depletion region” in an open circuited PN-junction, is there any current flow taking place after the Barrier is created, If yes, then support your answer.

Q6. The reverse saturation current at room temperature is $0.3\mu A$, when a reverse bias is applied to a Germanium Diode. Find the value of current flowing in the diode when 0.45V forward bias is applied at room temperature.

Q7. Explain the Breakdown mechanism. Differentiate between Zener and Avalanche Breakdown?

Do the assignment on A-4 sheets only. Use both side of the page.

After the date of submission, assignment will not be accepted and zero marks will be allotted to the student who fail to submit the assignment on due date.