

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATION- 2023

Ph.D-I Semester (PMS)

COURSE CODE (CREDITS): 05P1 WPH112 (03)

MAX. MARKS: 25

COURSE NAME: Compound semiconductors

COURSE INSTRUCTORS: HAZ

MAX. TIME: 1.5 H

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*Note: (a) All questions are compulsory.*

*(b) Marks are indicated against each question in square brackets.*

*(c) The candidate is allowed to make suitable numeric assumptions wherever required for solving problems*

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Q1. Discuss the junction characteristics of a p-n junction under forward and reverse biased conditions. [5-marks]

Q2. What are bipolar junction transistors? Discuss their classification and normal operations. [5-marks]

Q3. Discuss briefly the C-V measurements using a C-V meter. For a MOS capacitor sketch the C as a function of V. [5-marks]

Q4. Write short notes on (i) intrinsic and extrinsic semiconductors (ii) Ideality factor (iii) Effective mass of electron (iv) limitations of free electron theory (v) Zener diode [10-marks]