

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2025

B.Tech-VII Semester (CSE/IT/ECE/CE/BT/BI)

COURSE CODE (CREDITS): 18B1WPH731(03)

MAX. MARKS: 15

COURSE NAME: Nanotechnology

COURSE INSTRUCTORS: Ragini Raj Singh

MAX. TIME: 1 Hour

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

(b) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

Q.No	Question	CO	Marks
Q1	What are the main properties of materials changes upon reduction in particle size, give one example in each case. What are the main causes?	1	2.5
Q2	What is nanodrug encapsulation and nanobots? Discuss its advantages and applications.	1	2.5
Q3	Demonstrate with the help of diagram the evolution of the density of states as the dimensionality of the structure is reduced from 3D (bulk) to 0D (quantum dot).	1	2.5
Q4	How the Nanomaterials/nanotechnology is being used in health, agriculture, energy, defense and water purification purposes?	1	2.5
Q5	Discuss the current status of nanotechnology in India with respect to startup scenario, challenges and future outlook.	2	2.5
Q6	Discuss one short term and one long term applications of nanomaterials in detail, must specify which exact materials can be used in applications?	2	2.5