JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2025

PhD-II Semester (PMS)

COURSE CODE (CREDITS): 24B1WPH131 (03)   MAX. MARKS: 15

COURSE NAME: Nanotechnology in Agriculture

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	Marks
Q1	How does the increased surface area-to-volume ratio of nanomaterials affect their reactivity and interaction with plants and soil?	3
Q2	(a) How do we determine the appropriate water levels and application methods for nanomaterials in agriculture? (b) In animal agriculture, how are nanomaterials administered—through feed, injections, or skin patches?	3
Q3	(a) What role do nanomaterials play in post-harvest technology, including food processing and transportation? (b) How are nanomaterials utilized in food packaging and transportation to enhance shelf life and quality?	3
Q4	(a) What are the various forms of nanomaterials used in agriculture, such as particles, tubes, sheets, gels, and suspensions? (b) How does nanotechnology contribute to sustainable agriculture practices?	3
Q5	What are the different techniques discussed for the synthesis of nanomaterials in agriculture, and how does the use of surfactants affect the properties of nanoparticles in the high-energy ball milling process?	3