

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2024

B.Tech-VII Semester (Open Elective)

COURSE CODE(CREDITS): 18B1WPH731(03)

MAX. MARKS: 15

COURSE NAME: Nanotechnology

COURSE INSTRUCTORS: Dr. Ragini Raj Singh

MAX. TIME: 1 Hour

*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*

**Q.1.** What happens to a conventional material on switching to nanomaterial size. What are the main causes?

[CO: 1; Marks: 2.5]

**Q.2.** Explain photolithography to prepare nanostructures. What are the main problems associated with top down approach to prepare Nanomaterials.

[CO: 1; Marks: 2.5]

**Q.3.** What is the requirement of bottom up approach to prepare Nanomaterials over top-down approach? Discuss any one bottom up method to prepare nanomaterials?

[CO: 1; Marks: 2.5]

**Q.4.** How the Nanomaterials can be classified and what are the parameters for classification? Give example of each type of classification?

[CO: 2; Marks: 2.5]

**Q.5.** Discuss all the unique adjustable properties of Nanomaterials in comparison with their bulk counterparts?

[CO: 2; Marks: 2.5]

**Q.6.** Discuss two short term and two long term applications of nanomaterials in detail, must specify which exact materials can be used in applications?

[CO: 3; Marks: 2.5]