

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)

CLASS: M.Tech/Pre-PHD
BRANCH: Biotech.

SEMESTER :
SESSION : SP/22

SUBJECT:BE 602 Advances in Nanobiotechnology

TIME:02 h

FULL MARKS: 50

INSTRUCTIONS:

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
 2. Attempt all questions.
 3. The missing data, if any, may be assumed suitably.
 4. Before attempting the question paper, be sure that you have got the correct question paper.
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- Q.1(a) Classify nanomaterials based on their dimension? "Nanometer is a magical point on dimension scale". Explain Why? [5]
- Q.1(b) Define quantum dots? Discuss about their synthesis, properties and application? [5]
- Q.2(a) Explain Bragg's Law and Beer-Lambert's Law? Give the schematic of SEM & TEM? [5]
- Q.2(b) Describe the mechanism for nanoparticles synthesis? Explain the laser ablation method in detail. [5]
- Q.3(a) Define nanomotors? Discuss with suitable example about different known biomolecular nanomotors? [5]
- Q.3(b) Define S Layers? Explain their unique structure, properties, function and applications? [5]
- Q.4(a) What is a biosensor? Illustrate the schematic and principle of working of a biosensor? [5]
- Q.4(b) Discuss about Carbon nanotube biosensor and its application? [5]
- Q.5(a) Explain the role of Dendrimers in drug delivery? Discuss the role of self-immolative dendrimers? [5]
- Q.5(b) What is nanotoxicology? Explain EPR effect and its role in cancer treatment through nanotechnology? [5]

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25/04/2022 E