

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

CLASS: M.TECH
BRANCH: BIOTECH

SEMESTER : III
SESSION : MO/19

SUBJECT: BE602 ADVANCES IN NANOBIO TECHNOLOGY

TIME: 3 HOURS

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.
 5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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- Q.1(a) Classify nanomaterials based on their dimension. [5]
Q.1(b) What are quantum dots? Discuss about their synthesis, properties and application. [5]
- Q.2(a) Distinguish between SEM and TEM? Give the schematic of SEM. [5]
Q.2(b) What are different Top-Down approaches for nanofabrication? Explain any one. [5]
- Q.3(a) Discuss the significance of SPR in DNA-Gold nanoparticles conjugate based sensors. [5]
Q.3(b) What are S Layers? Illustrate their unique structure, properties and function. [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 EPR effect and its role in cancer treatment through nanotechnology. [5]
Q.5(b) What is nanotoxicology? How is it classified? Discuss the challenges involved. [5]

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