

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

CLASS: B. TECH.
BRANCH: BIOTECH.

SEMESTER : VII
SESSION : MO/2025

SUBJECT: BE407 NANOBIO TECHNOLOGY

TIME: 02 Hours

FULL MARKS: 25

INSTRUCTIONS:

1. The question paper contains 5 questions each of 5 marks and total 25 marks.
 2. Attempt all questions.
 3. The missing data, if any, may be assumed suitably.
 4. Tables/Data handbook/Graph paper etc., if applicable, will be supplied to the candidates
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Q.1(a)	Define the term Nanotechnology and specify the scientific notation of a nanometer?	[2]	CO CO1	BL BL1
Q.1(b)	Explain the concept of Surface Plasmon Resonance and its significance?	[3]	CO1	L2
Q.2(a)	Define Quantum Confinement?	[2]	CO1	BL1
Q.2(b)	"Nanoscale is a magical point on dimension scale". Justify suitably?	[3]	CO1	BL5
Q.3(a)	State the principle of UV-vis Spectroscopy?	[2]	CO1	BL1
Q.3(b)	Differentiate between SEM & TEM? Explain their role in nanomaterials characterization.	[3]	CO1	BL4
Q.4(a)	Define Self-assembly?	[2]	CO2	BL1
Q.4(b)	Explain the characteristic features of Self-assembly with suitable examples in context to biomolecular nanostructures?	[3]	CO2	BL2
Q.5(a)	Define Self-organization?	[2]	CO2	BL1
Q.5(b)	Discuss the concept of biomolecular structure and their stability?	[3]	CO2	BL2

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