

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI**  
**(MID SEMESTER EXAMINATION MO/2023)**

**CLASS: BTECH**  
**BRANCH: BIOTECH**

**SEMESTER : VII**  
**SESSION : MO/2024**

**SUBJECT: BE407 NANOBIOTECHNOLOGY**

**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
- 

Q.1(a)	Define the term Nanotechnology and specify the scientific notation of a nanometer?	[2]	CO1	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

:25/09/2024:M