CLASS: B.TECH   SEMESTER : VII
BRANCH: BIOTECHNOLOGY   SESSION : MO/2022

SUBJECT: BE407 NANOBIOTECHNOLOGY

TIME: 3:00 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.**

Q.1(a)	Define the terms with suitable examples: Nanotechnology, Nanobiotechnology & Bionanotechnology? L1-CO1	[2]
Q.1(b)	Explain the concept of Surface Plasmon Resonance with proper sketch and example. L2-CO1	[3]
Q.1(c)	Explain the Beer-Lambert's Law? Differentiate between SEM & TEM? L2, L4-CO1 & CO3	[5]
Q.2(a)	Define Liposomes and cite its major examples? L1-CO2	[2]
Q.2(b)	Discuss the concept of nanomaterials existence in biosystem with supporting examples? L2-CO2	[3]
Q.2(c)	Differentiate between the terms Self Assembly & Self Organization with supporting examples? L4-CO2	[5]
Q.3(a)	Classify nanomaterials base on dimensionality? L2-CO1	[2]
Q.3(b)	Discuss the molecular mechanism for nanoparticle formation with suitable representations? L2-CO3	[3]
Q.3(c)	"Quantum Dots offers band gap tunability". Support the statement with suitable explanation? L5 -CO3	[5]
Q.4(a)	Explain the concept "biosynthesis of nanoparticles" with suitable examples? L2-CO3	[2]
Q.4(b)	Describe the cellular mechanism involved for biosynthesis of nanoparticles from bacteria? L 2-CO3	[3]
Q.4(c)	Compare the advantages & limitations of nanoparticles synthesis via biological over conventional synthesis methods? L4-CO3	[5]
Q.5(a)	Explain the principle of working of a biosensor with schematics. L2-CO4	[2]
Q.5(b)	Describe the principle, working and applications of carbon nanotube biosensor? L2-CO4	[3]
Q.5(c)	Evaluate the nanotoxicological challenges with its impact on health and environment? L5-CO4	[5]

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