

CBCS SCHEME

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15NT82

Eighth Semester B.E. Degree Examination, July/August 2021 Bio-Nanotechnology

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions.

- 1 a. Explain in detail about chemical transformation using bionanomachines. (10 Marks)
b. Discuss about machine-phase bio-nanotechnology with examples. (06 Marks)
- 2 a. Distinguish between bio-nanotechnology and nano-biotechnology. (08 Marks)
b. Write a short note on biomaterials and biomineralization. (08 Marks)
- 3 a. Explain about Biomeolecular structure and stability. (12 Marks)
b. Discuss about Crane's principles of molecular recognition. (04 Marks)
- 4 a. Discuss about Protein Folding. (10 Marks)
b. Explain in detail about self organization of lipids. (06 Marks)
- 5 Explain about Bionanomachines in Water, Environment and Modern Biomaterials. (16 Marks)
- 6 a. Explain about ATP Synthase and Opsin. (08 Marks)
b. Describe about the functioning of Clathrin, Collagen and Flagella. (08 Marks)
- 7 a. Discuss in detail about sensors for biomedical applications. (10 Marks)
b. Explain ultrasound imaging techniques, mention its advantages and limitations. (06 Marks)
- 8 a. Write a note on targeted drug delivery. (10 Marks)
b. Discuss about sustained drug delivery and its advantages and limitations. (06 Marks)
- 9 a. Discuss about the possible strategies for the construction of bio-nanomachines. (08 Marks)
b. Explain about the research development in nanomedicine. (08 Marks)
- 10 a. Write a note on (i) Artificial smell sensors (ii) Artificial taste sensors. (08 Marks)
b. Explain about artificial light sensors and sensing of chemicals. (08 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.