CBCS SCHEME

USN | | | | | | | | | | |

18NT81

Eighth Semester B.E. Degree Examination, July/August 2022
Bio-Nanotechnology

Time: 3 hrs. Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1 a. Explain chemical transformation using bionanomachines. (10 Marks)
b. Write a note on biomaterials and biomineralization. (10 Marks)

OR

2 a. Explain the types and features of nucleic acids. (10 Marks)
b. Distinguish between bionanotechnology and nanobiotechnology. (10 Marks)

Module-2

3 a. Describe the strategies of construction of bionanomachines. (10 Marks)
b. Discuss about protein folding. (10 Marks)

OR

4 a. Explain the design principles of self assembly. (10 Marks)
b. Explain biomolecular structure and stability. (10 Marks)

Module-3

5 a. Discuss nanoscale effect of bionanomachines. (10 Marks)
b. Write notes on: (i) Actin and Myosin (ii) Thymidylate synthase (10 Marks)

OR

6 a. Explain ATP synthase and opsin. (10 Marks)
b. Describe nucleic acids, polysaccharides and liquids. (10 Marks)

Module-4

7 a. Explain in detail nanoscale materials for drug delivery. (10 Marks)
b. Explain the following: (i) nano medicine (ii) nano surgery (10 Marks)

OR

8 a. Discuss in detail sensors for biomedical applications. (10 Marks)
b. Write a note on targeted drug delivery. (10 Marks)

Module-5

9 a. Explain the possible strategies for the construction of bionanomachines. (10 Marks)
b. Write notes on: (i) Artificial Smell Sensors (ii) Artificial Taste Sensors (10 Marks)

OR

10 a. Explain 'nano tube synthase' for synthesis of carbon nano tubes. (10 Marks)
b. Write a note on nanorobots for surveillance and repair with p53 gene an example. (10 Marks)

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