

# CBCS SCHEME

USN

|  |  |  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|--|--|
|  |  |  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|--|--|

15NT82

## Eighth Semester B.E. Degree Examination, Aug./Sept.2020 Bio Nanotechnology

Time: 3 hrs.

Max. Marks: 80

*Note: i) For Regular Students: Answer any FIVE full questions irrespective of modules.  
ii) For Arrear Students : Answer any FIVE full questions, choosing ONE full question from each module.*

### Module-1

- 1 a. Explain briefly about types and features of nucleic acids. (10 Marks)  
b. Discuss about categories of self replication. (06 Marks)
- 2 a. Distinguish between bionanotechnology and nanobiotechnology. (08 Marks)  
b. Write a short note on biomaterials and biomineralization. (08 Marks)

### Module-2

- 3 a. Explain about biomolecular 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. (06 Marks)

### Module-3

- 5 Explain the molecular plans of biomaterials. (16 Marks)
- 6 a. Discuss about nano scale effects of bionanomachines. (08 Marks)  
b. Describe about the functioning of clathrin, collage and flagella. (08 Marks)

### Module-4

- 7 a. Explain about medical diagnostics, indication of diagnostic procedure and specific methods. (10 Marks)  
b. Explain transdermal drug release. (06 Marks)
- 8 a. Write a note on targeted drug delivery. (10 Marks)  
b. Explain ultra sound imaging techniques. Mention its advantages and limitations. (06 Marks)

### Module-5

- 9 a. Discuss about the possible strategies for the construction of bio-nanomachines. (08 Marks)  
b. Discuss about:  
i) The predictable advantages of bio-nanotechnology and ii) Molecular nanotechnology. (08 Marks)
- 10 a. Explain about the research developments in nanomedicine. (08 Marks)  
b. Explain about 'nanotube synthase' for synthesis of carbon nanotubes. (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.