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15NT82

Eighth Semester B.E. Degree Examination, June/July 2019
Bio Nanotechnology

Time: 3 hrs. Max. Marks: 80

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

Module-1

1 a. Distinguish between bio-nanotechnology and nanbiotechnology. **(08 Marks)**
b. Write a short note on biomaterials and biomineralization. **(08 Marks)**

OR

2 a. Explain in detail about chemical transformation using bionanomachines. **(10 Marks)**
b. Discuss about machine phase bio-nano technology with examples. **(06 Marks)**

Module-2

3 a. Discus protein folding is detail. **(10 Marks)**
b. Discuss in detail about self organization. **(06 Marks)**

OR

4 a. Discus about strategies of construction of biomachines. **(08 Marks)**
b. Explain about design principles of self assembly. **(08 Marks)**

Module-3

5 Explain about biomaterials and molecular plans. **(16 Marks)**

OR

6 a. Discuss about Nanoscale effects of bionanomachines. **(08 Marks)**
b. Write a short note on : i) Actin and Myosin ii) Thymidylate synthase. **(08 Marks)**

Module-4

7 a. Explain in detail about nanoscale materials for drug delivery. **(10 Marks)**
b. Explain transdermal drug release. **(06 Marks)**

OR

8 a. Explain ultrasound imaging techniques. Mention its advantages and limitations. **(06 Marks)**
b. Explain about medical diagnostics, indication for diagnostic procedure and specific methods. **(10 Marks)**

Module-5

9 a. Write short notes on : i) Artificial small sensors ii) Artificial taste sensors. **(08 Marks)**
b. Discuss about :
i) The predictable advantages of bio-nanotechnology and
ii) Molecular nanotechnology **(08 Marks)**

OR

10 a. Explain about 'nanotube syntheses' for synthesis of Carbon nanotubes. **(08 Marks)**
b. Write a note on nanorobots for surveillance and repair with P53 gene as example. **(08 Marks)**

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