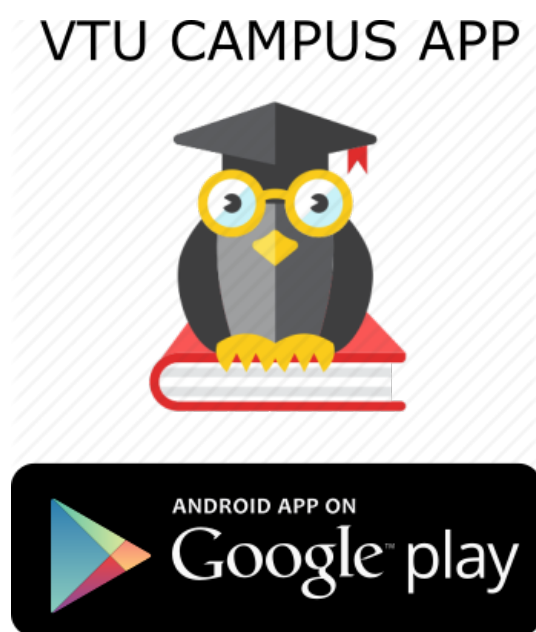


Nanobiotechnology VTU CBCS Question Paper Set 2018



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10NT661

Sixth Semester B.E. Degree Examination, June/July 2017
Nanobiotechnology

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions, selecting atleast TWO questions from each part.

PART – A

- 1 a. Explain briefly the types of Nucleic acids. (10 Marks)
b. Write a short note on information driven nano assembly. (10 Marks)
- 2 a. What is Self Assembly? Explain the design principles used in natural bionanomachines for self assembly. (10 Marks)
b. Write a brief note on Point group symmetries and their function in bionanomachines. (06 Marks)
c. Write a note on Quasi symmetrical complexes. (04 Marks)
- 3 a. Write a note on hydrophobic effects in biological molecules. (04 Marks)
b. Explain about the functions of lipids. (06 Marks)
c. Explain briefly about natural nanobiomachineries and their actions. (10 Marks)
- 4 a. Describe nanosensors and its applications. (06 Marks)
b. Explain about the electron transfer in biomolecular systems. (10 Marks)
c. Write a short note on effect of biosensors in biological and physiochemical techniques. (04 Marks)

PART – B

- 5 a. Explain the biomolecule manipulation in bioelectronics. (10 Marks)
b. Explain in detail about the semi conducting property of DNA. (10 Marks)
- 6 a. Explain briefly about nano medicine and nano surgery. (10 Marks)
b. Explain briefly the different drug delivery vehicles. (10 Marks)
- 7 a. Write a short note on the timetable of nano biotechnology. (06 Marks)
b. Explain briefly about the limitations and solutions of molecular nano technology. (04 Marks)
c. Write a note on general nano scale assembler. (10 Marks)
- 8 a. Explain the concept of nano toxicology. (10 Marks)
b. Explain about micro array and nano biochip. (10 Marks)

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Sixth Semester B.E. Degree Examination, June/July 2016
Nanobiotechnology

Time: 3 hrs.

Max. Marks: 100

**Note: Answer FIVE full questions, selecting
at least TWO questions from each part.**

PART – A

- 1
 - a. Distinguish between bionanotechnology and nanobiotechnology (08 Marks)
 - b. Write a short note on the light dependent chemical reactions in biological system. (06 Marks)
 - c. Write short note on biomaterials. (06 Marks)
- 2
 - a. Explain about the four hierarchical strategies of construction of nanomachines. (08 Marks)
 - b. Discuss about biomolecular structure and stability. (12 Marks)
- 3
 - a. Why gravity and inertia are negligible at nanoscale? (06 Marks)
 - b. Explain about atomic granularity of nanomachines. (04 Marks)
 - c. Explain about protein based nanomachines. (10 Marks)
- 4
 - a. Write a short note on biochip and micro array fabrication. (10 Marks)
 - b. Describe about nano-sensors and its applications. (06 Marks)
 - c. Explain about effect of biosensors in biological and physico-chemical techniques. (04 Marks)

PART – B

- 5
 - a. Write a brief note on sequence specific molecular lithography. (10 Marks)
 - b. Write a note on bioelectronics. Explain how biomolecules manipulate the bioelectronics. (10 Marks)
- 6
 - a. What is medical imaging? (04 Marks)
 - b. What is MRI? Mention its advantages and limitations. (06 Marks)
 - c. Explain about targeted drug delivery. (10 Marks)
- 7
 - a. What are the predictable advantages of nanobiotechnology? (06 Marks)
 - b. Give the case study on solving the issue of mutation of P⁵³ gene. (10 Marks)
 - c. Write a short note on the advantages and limitations of nano robots in repair of cells and genes. (04 Marks)
- 8
 - a. Explain about protein biochip array. (10 Marks)
 - b. Explain briefly about nanotoxicology. (10 Marks)

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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.