

QP CODE: 19101366



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Reg No : .....

Name : .....

**B.Sc DEGREE (CBCS) EXAMINATION, MAY 2019**

**Fourth Semester**

B.Sc Biotechnology Model III

**Core Course - BT4CRT11 - BIOPHYSICS AND BIOINFORMATICS**

2017 Admission onwards

3FD36A77

**Maximum Marks: 60**

**Time: 3 Hours**

**Part A**

Answer any **ten** questions.

Each question carries **1** mark.

1. Explain free energy.
2. What is reverse osmosis?
3. Explain Transmittance.
4. Explain IR spectroscopy.
5. Explain Peptide bonds.
6. What are the various DNA conformations?
7. Define Bioinformatics.
8. Who coined the term 'Bioinformatics'?
9. What is PDB ID? Give one example.
10. Construct dot plot for: ATTAGCTAA and GTTACTGAA
11. What is evolutionary distance?
12. What are protein visualization tools? Give examples.

(10×1=10)

**Part B**

Answer any **six** questions.

Each question carries **5** marks.

13. Differentiate sols and gels.
14. Explain radioactive decay.
15. Describe the working principle of GM counters.
16. Working principle of Scintillation counters.





17. Explain primary and secondary structure of proteins.
18. Explain the role of chaperones in protein folding.
19. Biological databases are the source of scientific information. Justify.
20. Write a note on the scope of bioinformatics.
21. Describe the Protein Secondary and Tertiary structure prediction methods?

(6×5=30)

### Part C

Answer any **two** questions.

Each question carries **10** marks.

22. Explain the biological importance of water.
23. Describe the principle and applications of spectrophotometry.
24. Describe the structural and sequence DNA polymorphisms.
25. Describe the significance, features and applications of drug bank.

(2×10=20)

