

QP CODE: 25019341

Reg No : Name :

B.Sc DEGREE (CBCS)) REGULAR/ IMPROVEMENT/ REAPPEARANCE / MERCY CHANCE EXAMINATIONS, FEBRUARY 2025

Fourth Semester

B.Sc Biotechnology Model III

Core Course - BT4CRT11 - BIOPHYSICS AND BIOINFORMATICS

2017 Admission Onwards

A04700DE

Time: 3 Hours

Max. Marks : 60

Part A

Answer any **ten** questions. Each question carries **1** mark.

- 1. Define diffusion.
- 2. Explain isobars.
- 3. What is colorimetry?
- 4. What is spectrophotometry?
- 5. Heat shock proteins.
- 6. What is RFLP?
- 7. What is biological database?
- 8. Comment on Margaret Dayhoff.
- 9. What is UniProt?
- 10. What is optimum alignment?
- 11. Differentiate orthologs, paralogs and xenologs.
- 12. What are protein visualization tools? Give examples.

(10×1=10)

Part B

Answer any **six** questions. Each question carries **5** marks.

- 13. What are the properties of water?
- 14. Explain colloids and describe the properties.
- 15. Describe the working principle of GM counters.
- 16. Working principle of Scintilation counters.
- 17. Explain primary and secondry structure of proteins.
- 18. Compare and contrast A and B DNA.
- 19. Biological databases are the source of scientific information. Justify.
- 20. What are the rescent trends in bioinformatics?
- 21. Secondary structure prediction of protein is useful in the full length 3D prediction. Justify.

(6×5=30)

Part C

Answer any **two** questions. Each question carries **10** marks.

- 22. Explain the Laws of thermodynamics.
- 23. Explain in detail working principle of UV-VIS spectroscopy.
- 24. Explain various stablising forces in macromolecules.
- 25. Describe the significance, features and applications of drug bank.

(2×10=20)