QP CODE: 25022228

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Reg No : .....

Name : .....

M.Sc DEGREE (CSS) SPECIAL REAPPEARANCE EXAMINATION, APRIL 2025

Third Semester

M.Sc BIOINFORMATICS

CORE - BT010302 - PROTEOMICS & CADD

2019 ADMISSION ONWARDS

538A9475

Time: 3 Hours Weightage: 30

Part A (Short Answer Questions)

*Answer any **eight** questions.*

*Weight **1** each.*

1. What is X-ray crystallography?
2. Write a short note on Swiss Institute for Bioinformatics.
3. Explain how α-helix and β-pleated sheet structures are formed.
4. What is amino acid hydrophobicity? What is its significance in protein structure?
5. What is conformational energy?
6. Write a short note on various data sources that aid in protein function prediction.
7. What is the importance of blood-brain barrier in drug delivery?
8. What is serendipity method of drug discovery?
9. What is Z' equation in HTS?
10. How to calculate ligand efficiency in screening?

(8×1=8 weightage)

Part B (Short Essay/Problems)

*Answer any **six** questions.*

*Weight **2** each.*

11. Explain in detail about InterPro database.
12. Explain about protein tertiary structure.
13. Write a short essay on hierarchical classification of protein domain structures.
14. Describe the important steps involved in homology modelling.
15. Describe any two tools used for protein structure prediction.

16. Give a brief account on the molecular basis of disease

17. Explain the factors that affect drug action.

18. What is the significance of cross validation in QSAR?

(6×2=12 weightage)

Part C (Essay Type Questions)

*Answer any **two** questions.*

*Weight **5** each.*

19. Explain mass spectrometry as a powerful analytical technique in proteomics.

20. Describe various chemical bonds and interactions that play important role in stabilizing three dimensional protein structure.

21. Describe the different phases in drug development process.

22. Explain the features and parameters of admet-SAR program.

(2×5=10 weightage)