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Reg. No.....

Name.....

**M.Sc. BIOCHEMISTRY DEGREE (C.S.S.) EXAMINATION  
OCTOBER 2025**

**First Semester**

BC1M001PC2—BIOPHYSICS, BIOINSTRUMENTATION AND BIOINFORMATICS

(2018 to 2015 Admissions—Mercy Chance)

Time : Three Hours

Maximum Weight : 30

**Part A (Short Answer Questions)**

*Answer briefly any **five** questions.*

*Weight 1*

1. Explain the importance of ultra speed centrifugation in biological research.
2. Explain radiation units and dosimetry.
3. Differentiate HPLC and HPTLC.
4. Explain homology modeling.
5. Write about radioimmunoassay.
6. Explain CADD.
7. Write a note on zinc fingers.
8. Write about SDS PAGE.

(5 × 1 = 5)

**Part B (Short Essay Questions)**

*Answer any **five** questions.*

*Weight 2 each.*

9. Write about data mining and its applications.
10. Explain ion exchange chromatography.
11. Write a note on flow cytometry.
12. Write about molecular simulation.

**Turn over**





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13. Explain protein -protein interaction.
14. Write a note on search tools.
15. Write an account on isoelectric focusing.
16. Explain how protein structure can be predicted.

(5 × 2 = 10)

### **Part C (Long Essay Questions)**

*Answer any **three** questions.*

*Weight 5 each.*

17. Write an account on ionizing and non ionizing radiations. Explain the applications of isotopes in Biology.
18. Write an account on major DNA and RNA databases. Mention the importance of Bioinformatics.
19. Explain the principle and applications of spectroscopy. Give an account of infrared and fluorescence spectroscopy.
20. Explain the structure of immunoglobulin and how structure of immunoglobulin can be studied using NMR and X ray.
21. Describe DNA protein interaction.
22. Give an account on principle, types and application of centrifugation.

(3 × 5 = 15)

