

Reg. No. :

Name :

Ph.D. ENTRANCE EXAMINATION, NOVEMBER 2022

FACULTY OF SCIENCE

BIOCHEMISTRY

Time : 3 Hours

Max. Marks : 100

Instructions :

- 1) Answer **any ten** questions each from Section **A** and **B**.
- 2) Each question carries **5** marks.
- 3) No additional Answer sheets will be provided.
- 4) Candidates should clearly indicate the section, Question number in the answer booklet.

Section – A

Research Methodology

- I. Answer **any ten** questions. All questions carry equal marks
 1. Discuss the challenges of intellectual property rights.
 2. Comment on the impact of patenting laws in India.
 3. Explain the importance of research ethics.
 4. Discuss the characteristics logical format for writing thesis and research papers.
 5. Give an account of sampling methods.
 6. Comment on tests of statistical significance.
 7. Discuss correlation analysis.
 8. Describe the various biological data bases.

9. Explain the principles and methods of sequence analysis.
10. Give an account of applications of bioinformatics.
11. Discuss the importance of genomics in health and disease.
12. Explain computer aided drug design(CADD).
13. How will you prepare a scientific report?
14. Explain hypothesis, law and theory.
15. How will you conduct literature review of your research topic?

(10 × 5 = 50 Marks)

Section – B

Biochemistry

- II. Answer **any ten** questions. All questions carry equal marks
1. Discuss the components of extra cellular matrix.
2. Explain a method of cell fractionation.
3. Write down glyoxylate cycle and its importance in plants.
4. Explain the pathways of apoptosis.
5. Comment on enzyme regulation.
6. Explain the functions of Cori cycle and Glucose – Alanine cycle
7. Explain any one method of DNA sequencing.
8. Discuss the steps in the production of monoclonal antibody.
9. Discuss the role of Fructose 2,6 bis phosphate in the regulation of glycolysis.
10. Explain the hormonal regulation of glycogen metabolism.

11. Describe the events in cell cycle.
12. Sketch the structure of plasma membrane and the explain the components.
13. Discuss the applications of SDS-PAGE.
14. Describe the events in translation.
15. Write the principle and applications of MALDI-TOF MS.

(10 × 5 = 50 Marks)
