

2125

M.Sc. (Bio-Informatics) Third Semester  
MBIN-8015: Genomics and Proteomics – I

Time allowed: 3 Hours

Max. Marks: 60

**NOTE:** Attempt five questions in all, including Question No. I which is compulsory and selecting atleast one question from each Unit.

*x-x-x*

I. Answer briefly:

- a) C value paradox
- b) Lipid attachment to proteins
- c) Base calling
- d) FASTQC
- e) Nucleosomes
- f) Centromeres

(6x2)

**UNIT - I**

- II. a) Discuss the organization of the Mitochondrial genome.
- b) Explain any two types of histone modifications. (2x6)
- III. a) Elaborate on the significance of operons in prokaryotic genomes.
- b) Write a note on repetitive content of eukaryotic genomes highlighting its role. (2x6)

**UNIT - II**

- IV. Discuss the principle, working and applications of MALDI-TOF. (12)
- V. a) Explain the process of sample preparation and solubilization in 2D PAGE for different types of protein samples.
- b) How can we address the problem of reproducibility in 2D PAGE? (2x6)

**UNIT - III**

- VI. a) Describe the principle and working of 454 platform for Next Generation Sequencing.
- b) Explain the determination of protein sequence by Edman degradation. (2x6)
- VII. a) Discuss the effects of salt concentration and organic solvents on protein isolation.
- b) Elaborate on the process of glycosylation and discuss its significance. (2x6)

*x-x-x*