2021
M.Sc. (Bio-Informatics) Third Semester
MBIN-8015: Genomics and Proteomics – I

Time allowed: 3 Hours   Max. Marks: 60

NOTE: *Attempt* <u>*five*</u> *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) Genome imprinting

  b) (b) FASTQC

  c) SDS PAGE

  d) C value paradox

  e) DNA methylation

  f) Centromere

  g) Sample preparation of 2D-PAGE

  h) Edman degradation   (8x1½)

UNIT – I

II.   a) Explain the organization of mitochondrial genome.

  b) Discuss repeats and the significance of repetitive content of eukaryotic genomes.
                                                                              (5,7)

III. a) Write a note on Nucleosome remodeling.

  b) Elaborate on the Histone modifications.   (2x6)

UNIT – II

IV.   Explain proteome. How is 2D-PAGE used for the analysis of proteomics?   (12)

V.   a) Discuss the de novo sequencing using mass spectrometric data.

  b) How is MALDI-TOF used for protein mass determination?   (2x6)

UNIT – III

VI.   a) Discuss the principle of Next Generation Sequencing. Explain Solexa.

  b) Explain the need for De novo and reference based genome assembly.   (8,4)

VII. Write a note on the methods of protein isolation, solubilization and stabilization. (12)

x-x-x