Exam.Code:0441
Sub. Code: 25968

2124

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) Comment on the difference between nuclear and mitochondrial DNA.

b) What is functional proteomics?

c) Briefly describe the role of telomeres in cell division.

d) What do you understand by the term 'Base calling'.

e) Explain the concept of operon using an example.

f) Write the principle of ion torrent system of DNA sequencing.

g) Briefly describe Edman degradation.

h) What is the effect of salt concentration on protein solubility? (8x1½)

UNIT - I

II. a) Describe in detail the hierarchical organisation of eukaryotic genome.

b) Write a short note on Genome imprinting. (8+4)

III. a) What do you understand by the terms minisatellites and microsatellites ? Discuss their application in genetic profiling.

b) Discuss the role of histone acetylation in regulating genome expression. (6+6)

UNIT - II

IV. a) Give an overview of different types of proteomic workflows.

b) Write a short note on use of MALDI-TOF for protein mass determination. (6+6)

V. a) Comment on the application of 2D-PAGE in proteomics. Describe different steps involved and the precautionary measures required for successful outcome.

b) Discuss the pros and cons of denovo sequencing of proteins by mass spectroscopy. (8+4)

P.T.O.

UNIT - III

VI. a) Describe in detail the clone contig approach for genomic DNA sequencing.

b) Write a short note on reference based genome-assembly. What are its advantages? (7+5)

VII. Write short notes on the following:-

a) Edman degradation for determination of covalent structure

b) Proteomic strategy for post translationally modified protein (6+6)

x-x-x