2054

M.Sc. (Bio-Informatics) Fourth Semester

MBIN-8020: Expression Bio-Informatics

Time allowed: 3 Hours

Max. Marks: 45

NOTE: *Attempt* <u>five</u> *questions in all, including Question No. I which is compulsory and selecting two questions from each Unit.*

x-x-x

I. Answer Briefly

   a) What are Reverse phase microarrays?

   b) How does miRNA play a role as regulatory RNA?

   c) Which dyes are mainly used to label probe in cDNA microarray?

   d) What are Chip-on-chip arrays?

   e) Which strategy is used to enhance binding of oligonucleotides or cDNA on microarray CHIPs?

   f) piRNA

(6x1½)

UNIT - I

II. a) Discuss the outline of experimental procedure for a oligonucleotide microarray experiment.

   b) Write a note on k-means clustering.

(6,3)

III. a) What is the significance of self-organizing maps?

   b) Discuss the significance of biological replicates in microarray experiment. (6,3)

IV. a) What is the significance of normalizing in microarray data analysis?

   b) Discuss oligonucleotide DNA microarray analysis.

(4,5)

UNIT - II

V. a) Discuss the specific uses of Protein Microarray technology.

   b) How is an EST database different from a nucleotide database?

(5,4)

VI. a) How does Alternative splicing lead to many proteins from a single transcript?

   b) Discuss the regulatory role of SnoRNA.

(5,4)

VII. a) Explain the detection technology for protein chips.

   b) Discuss the experimental strategies for generating a proteome library.

(3,6)

x-x-x