1058

M.Sc. (Bio-Informatics) Fourth Semester
MBIN-8020: Expression Bio-Informatics

Time allowed: 3 Hours   Max. Marks: 45

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

x-x-x

I.   Attempt the following:-

    a) Define biological replicates in a microarray experiment.

    b) In a Dye swap normalization of Microarray, which dyes are most commonly used.

    c) Which physical supports are compatible for fabricating protein arrays?

    d) What is RNA interference?

    e) Define k-means clustering.

    f) What is CHIP on chip array?   (6x1½)

UNIT – I

II.   a) Discuss in detail cDNA-Microarray technology procedure.

    b) Give a brief account of clustering approaches in microarray data analysis.   (4,5)

III.   a) Give a detailed procedure of generating transcriptome expression data using Oligonucleotides based microarray technology.

    b) What are microarray databases, give example of two such databases.   (6,3)

IV.   a) Discuss the procedure of Image processing in microarray data analysis.

    b) What are House Keeping genes in a microarray experiment, discuss their importance giving examples.   (6,3)

UNIT – II

V.   Write short notes on following:-

    a) Anti-sense RNA

    b) miRNA

    c) Differential display technology   (3x3)

P.T.O.

VI. a) Discuss various types of protein array technology and its applications.

b) What are ESTs, add a short note on significance of studying ESTs. (6,3)

VII. a) Discuss the experimental strategy for generating proteome library.

b) Briefly discuss the technique of subtractive hybridization. (6,3)

x-x-x