

FACULTY OF SCIENCE
M.Sc. IV - Semester Examination, April / May 2014

Subject: Biochemistry
Paper- IV : Computational Methods and Bioinformatics

Time : 3 Hours

Max. Marks: 80

PART – A (4 x 8 = 32 Marks)
(Short Answer Type)

- 1 Define standard deviation and standard error.
- 2 Write about methods of sampling
- 3 Write a note on CPU
- 4 Describe networking concepts in data search.
- 5 Write a note on SWISSPROT
- 6 Give an account on DNA data bases
- 7 What are DNA microarrays?
- 8 Write a note on transcriptome.

PART – B (4 x 12 = 48 Marks)
(Essay Answer Type)

- 9 (a) Compute mean, mode, variance and standard deviation for the following data on blood sugar content of 15 individuals:

120, 180, 118, 110, 125, 190, 135, 140, 143, 155, 160, 100, 159, 160, 170

OR

- (b) Explain the concepts of :
- (i) Probability and randomness
 - (ii) Tests of significance and correlation

- 10 (a) Write a note on :
- (i) Software and programming languages
 - (ii) Super computer systems

OR

- (b) Give an account on :
- (i) Auxiliary storage devices
 - (ii) Important software packages used in biology

- 11 (a) Discuss alignment and comparison of sequences.

OR

- (b) Write a note on methods involved in DNA sequencing.

- 12 (a) Give an account on applications of Bioinformatics.

OR

- (b) Discuss about :
- (i) Pharmacogenomics
 - (ii) Functional genomics

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