C 56983 **(Pages : 2)** **Name**

Reg. No. . . . . .

SECOND SEMESTER M.Sc. (MICROBIOLOGY) DEGREE EXAMINATION, JULY 2009

Microbiology

MB 2.4 T – BIOPHYSICS, BIOSTATISTICS AND BIOINFORMATICS

(2005 Admissions)

Time : Three Hours Maximum : 80 Marks

Section A

Write about / answer **all** *the questions very briefly.*

1. Explain the terms ; within sum of squares, between sum of squares and total sum of squares.
2. Uses of Chi-square distribution.
3. Super secondary structure.
4. a-helix.
5. Motifs.
6. Interfern.
7. Primary structure of immunoglobulin.
8. Protein Engineering.
9. Pub. Med.
10. Search engines.
11. Swiss - prot.
12. Server of a computer.
13. Homology modelling.
14. CTP.
15. Leucine-Zipper.
16. Creatine phosphate.
17. Cloves leaf model of t-RNA.
18. Fluid-Mosaic model.
19. Phase problem in cyrstallography.
20. Steps in phylogenetic analysis.

(20 × 2 = 40 marks)

Turn over

Section B

Answer any **five** *questions.*

1. (a) Concept of regression and its difference with correlation.

   (b) From the following data of the age of husband and the age of wife, using the regression equation estimate husband's age when the wife's age is 16.

Husband's age	:	36	23	27	28	29	30	31	33	35
Wife's age	:	29	18	20	22	27	21	29	27	29

2. Explain conformation of Haemoglobin.
3. Structure and conformation of polysaccharides.
4. Give an account about protein modelling.
5. What are interleukins? Explain their 3-dimensional structure.
6. Explain the role of amino acids in protein structure.
7. Explain important measures of central tendency.

(5 x 8 = 40 marks)