

THIRD SEMESTER M.Sc. DEGREE EXAMINATION, FEBRUARY 2009**GBT 211—BIOSTATISTICS AND BIOINFORMATICS**

Time : Three Hours

Maximum : 80 Marks

Section A*Answer any two questions.*

1. The age and blood pressure data are given below. Find the regression equation of blood pressure on age and estimate blood pressure when the age is 45 years.

Age in years ... 56 42 72 36 63 47 55 49 38 42 68 60

Blood Pressure ... 147 125 160 118 149 128 150 145 115 140 152 155

2. Write a C program, which will read a DNA sequence from a data file and count all occurrences of a string TATA.
3. Explain in detail about FASTA and BLAST algorithms.

(2 x 10 = 20 marks)

Section B*Answer any ten questions.*

4. What are the measures of central tendency ? Write their merits and demerits.
5. Explain the principle of Chi-square test used for testing the goodness of fit.
6. Lives of two models of refrigerators turned in for new models in a recent survey are :

<i>Life (No. of years)</i>	<i>Number of Refrigerators</i>	
	<i>Model A</i>	<i>Model B</i>
0 – 2	5	2
2 – 4	16	7
4 – 6	14	12
6 – 8	7	19
8–10	5	9
10 – 12	4	1

What is the average life of each model of these refrigerators ? Which model has more uniformity ?

7. Explain the classification of different types of computers.

Turn over

8. Write a QBASIC program to reverse a given string.
9. Write a C program to compute the factorial of a given integer.
10. Discuss the advantages of database management systems over file management systems.
11. Explain the important commands used in Corel Draw to generate a 3-D view of a double helical structure of a DNA.
12. Describe the bubble sort method and develop an algorithm for it.
13. Describe the various public domain protein sequence and structure databases.
14. How is a nucleotide sequence retrieved from a database ?
15. Describe the salient features of Internet. List few applications of Internet.

(10 x 5 = 50 marks)

Section C

*Answer **all** questions.*

16. Mention the concept and use of least square method.
17. What is rank correlation ? State its uses.
18. Why is C language called as a structured programming language ?
19. Write a QBASIC program to swap two numbers.
20. What is the role of FASTx/FASTn programs ?

(5 x 2 = 10 marks)