

SECOND SEMESTER M.Sc. DEGREE EXAMINATION, AUGUST 2008

Microbiology

MB 2.4 T—BIOPHYSICS, BIOSTATISTICS AND BIOINFORMATICS

(2005 Admissions)

Time : Three Hours

Maximum : 80 Marks

Section A

*Answer **all** questions.
Each question carries 2 marks.*

1. Write briefly on statistical data collection.
2. What is median ? Explain with an example.
3. What are range and inter quartile range ? Explain with examples.
4. What is a random experiment ?
5. What is the probability of getting an even number in a single throw of a die ?
6. What is binomial probability distribution ?
7. Write on n-sheets ?
8. What are the forces stabilizing tertiary structure of a protein ?
9. What is domains in protein structure ?
10. How do you classify amino acids ?
11. What is an antibody ?
12. What is **Mutarotation** ?
13. Give structure of a disaccharide.
14. What is a nucleotide ?
15. What is secondary structure of t-RNA ?
16. Write on high energy phosphate compounds.
17. What are the crystallization techniques for a protein ?
18. What is the function of an operating system ?
19. What is an **ORF** ?
20. What is Gen Bank ?

(20 x 2 = 40 marks)

Turn over

Section B

*Answer any **five** questions.
Each question carries **8** marks.*

21. Find the mode of following data :—

| | | | | | | | | | | | |
|-----------|-----|---|---|---|---|----|----|----|----|----|----|
| Variables | ... | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| Frequency | ... | 2 | 5 | 8 | 9 | 12 | 14 | 14 | 13 | 11 | 10 |

22. Describe different types of events.
23. Write on Ramachandran plot.
24. Describe secondary structure prediction method.
25. Write on DNA polymorphism.
26. Write on protein-DNA interactions.
27. Write on DNA sequence analysis.

(5 X 8 = 40 marks)