Exam.Code:0440
Sub. Code: 25960

2056

M.Sc. (Bio-Informatics) Second Semester

MBIN-8007: Statistics and Probability

Time allowed: 3 Hours Max. Marks: 60

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

x-x-x

1. Define the following :
   a) Continuous variable
   b) Tabulation of data
   c) Standard deviation
   d) Conditional probability
   e) Mention two properties of correlation coefficient
   f) Explain Bernoulli distribution.
   g) Expectation of a random variable
   h) Type I error **(8×1.5)**

UNIT - I

2. (a) Define and compare the features of mean, median and mode?
   (b) Find the mode of the following distribution.

Class Interval	0-20	20-40	40-60	60-80	80-100
No. of patients	29	.73	113	85	15

(6, 6)

3. (a) Explain the different methods of collecting secondary data.
   (b) Draw histogram of the following data

Class	0-5	5-10	10-15	15-20	20-25	25-30
Frequency	14	20	18	16	13	10

(6, 6)

4. (a) What do you understand by Kurtosis? How is it measured? Distinguish clearly, by giving figures, between different types of Kurtosis.
   (b) Calculate Karl Pearson's Coefficient of skewness from the following data:

Size	1	2	3	4	5	6	7
Frequency	12	20	32	27	14	5	4

(6, 6)

UNIT - II

5. Define the following terms:
   (a) Sample Space & Equally Likely Events
   (b) Subjective Probability & Independent Events

(6, 6)

P.T.O.

6. (a) State and prove Bayes theorem.

   (b) Let A and B be two independent events such that P (A ∪ B) = .64 and P (A ∩ B) =.16. Determine P (A) and P (B). **(6, 6)**

7. Define the following:

   a) Mann-whitney test

   b) Critical Region

   c) Central Limit theorem **(3×4)**

x-x-x