Exam. Code : 107402

Subject Code : 2115

B.Sc. Bio-Technology Semester—II

BIOSTATISTICS

Paper—BT-5

Time Allowed—3 Hours] [Maximum Marks—40

Note :— The question paper consists of ***three*** sections A, B and C. The candidates are required to attempt ***all*** questions of Section-A and ***five*** questions from Section-B and any ***two*** questions from Section-C.

SECTION—A 8×1=8

1. Write short notes around **50** words :
   (i) Representation of Data
   (ii) Discrete Data
   (iii) Sample Space
   (iv) Events
   (v) Scatter Diagram
   (vi) Linear Correlation
   (vii) Bernoulli Distribution
   (viii) Poisson Distribution.

SECTION—B 5×4=20

2. What is standard deviation ? How is it different from standardized deviation ?

3. What is geometric mean ? How is it different from arithmetic mean ?
4. What is variance ? How will you determine it ?
5. What is probability distribution function ? How will you determine it ?
6. Explain the Bayes theorem.
7. How will you find linear regression line ?
8. What is normal distribution ? Explain.
9. What is chi-square test ?

SECTION—C 2×6=12

10. The arithmetic mean of 5 observations is 4.4 and the variance is 8.24. If three of the five observations are 1, 2 and 6, find the values of the other two.
11. (a) Explain in detail the use of counting method in probability.
    (b) Define conditional probability.
12. From the following table calculate the coefficient of correlation by Karl Pearson's method :

x	y
6	9
2	11
10	?
4	8
8	7

The arithmetic means of X and Y series are 6 and 8 respectively.

13. The following figures show the distribution of digits in numbers chosen at random from a telephone directory :

Digit	Frequency
0	1026
1	1107
2	997
3	966
4	1075
5	933
6	1107
7	972
8	964
9	853
Total	10,000

Test whether the digits may be taken to occur equally frequently in the directory (The table values of X^2 for 9 d.f. at 5% level of significance is 16.92).