(v) Use of Range (a measure of Variation)

(vi) Standard Deviations

(vii) Degree of Freedom

(viii) Frequency polygon

(ix) Central tendency

(x) Goodness of fit

(xi) Population

(xii) Probability

(xiii) Bionomical distribution

(xiv) T-test

(xv) Confidence level. 15×2=30

Roll No. ..... **Total No. of Pages : 4**

PC 11694-NH

AS/2111

BIOSTATISTICS—BTHB 1104 T

Semester—I

Time Allowed : 3 Hours] [Maximum Marks : 74

Note :— Attempt ***two*** questions from the each Section A and B and the Section C is compulsory.

SECTION—A

1. (a) Define the terms Primary data and Secondary data. Discuss the different methods for the collection of primary data in detail. 7

   (b) Discuss the merits and demerits of Standard Deviations. 4

2. (a) Define Classification. Explain the various ways of classification adopted in statistics. 7

   (b) Discuss the merits and demerits of Mode. 4

3. (a) A sample of 20 plants from a population was measured in the inches as follows :

   18, 21, 20, 23, 20, 21, 22, 20, 20, 19, 17, 21, 20, 22, 20, 21, 20, 22, 19 and 23.

   Calculate the Mean and Standard Deviation. 6

   (b) Write down a note on Classical Probability with suitable example. 5

4. (a) Briefly discuss the characteristics of Measure of Central Tendency. 5

(b) Calculate the Mean, Median and Mode of the frequency distribution of the following :

Class Limits	Frequency
130—134	5
135—139	15
140—144	28
145—149	24
150—154	17
155—159	10
160—164	1

6

SECTION—B

5. (a) Give notes on the following :

(i) Range and range co-efficient

(ii) ANOVA. 5

(b) Define F test. Discuss assumption and uses of F test. 6

6. (a) What is histogram ? Explain different types of histogram. Draw the histogram for a population of carp fishes in 50 ponds as follows :

No. of carps per ponds	No. of ponds
0—50	6
50—100	9
100—150	13
150—200	10
200—250	8
250—300	4

6

(b) Define Chi-square. Explain the types and uses of Chi-square. 5

7. (a) Briefly discuss the assumptions and technique for analysis of variance. 5

(b) Differentiate between Correlation and Regression. 6

8. (a) Calculate by any method, the correlation coefficient between the following two set of scores of B.Sc. Biotechnology pupils :

Pupils	x	y
A	48	22
B	50	32
C	54	29
D	60	33
E	64	30
F	58	36
G	70	40
H	66	36
I	50	21
J	50	36
K	46	26
L	63	43

6

(b) Define "t" test. Explain the properties and application of "t" distribution. 5

SECTION—C

9. Explain the following :

(i) Dispersion

(ii) Kurtosis

(iii) Statistical error

(iv) Probability