

B.Sc. 2nd Semester (Latest)

Examination, May-2023

BIOTECHNOLOGY

Paper-BT-201

Bio-Statistics

Time allowed : 3 hours]

[Maximum marks : 40

Note : Attempt five questions. Question No. 1 is compulsory. Select one question from each unit.

1. All questions carry equal marks. [8×1.25=10]

(i) What is the significance of trigonometric identities ?

(ii) Give the relationship formula between roots and coefficient of algebraic equations ?

(iii) What is the significance of simple algebraic functions ?

(iv) What is integration of $dx/x^{1/2}(5-x)^{1/2}$?

(v) What is regression ?

(vi) ~~Expend ANOVA~~

(vii) ~~What is null hypothesis?~~

(viii) ~~What are measures of central tendency?~~

Unit-I

2. ~~What is logarithm? Give the different laws of logarithm.~~ 7.5

3. What do you understand by matrices? If Radha, Fauzia, Simran are the student of 12th class, Radha has 15 notebook and 6 pens, Fauzia has 10 books 2 pens and Simran has 13 books and 5 pens, then express this into matrix forms. 7.5

Unit-II

4. ~~What is Limit of a function? A function is given by $f(x) = 3x + 1$ $f(x) = 3x + 1$, Find $f(10)$.~~ 7.5
the value that the funcⁿ approaches as it app

5. Determine dy/dx in terms of x and y for the equation :

$$x + xy^2 - y = 3.$$

$$\begin{aligned} y(0) &= 3 \times 10 + 1 \\ &= 30 + 1 \\ &= 31 \end{aligned} \quad 7.5$$

Unit-III

6. Write short notes on following : $2.5 \times 3 = 7.5$

- (a) Classification of statistical data
- (b) Dispersion
- (c) Skewness

7. Calculate the mean, median and mode for following data : 7.5

Age	: 10-20	20-30	30-40	40-50	50-60
Persons	: 7	20	23	15	5

Unit-IV

8. Write notes on following with formula : $2.5 \times 3 = 7.5$

(a) Standard Deviation

input (b) Confidence level

each of (c) Chi-square test
values.

9. (a) What are tests of significance ? Explain in detail. 7.5

(b) What is ANOVA ? Explain the applications of ANOVA.