S.No. 6083   **P 22 BCE 1 A**

(For candidates admitted from 2022–2023 onwards)

M.Sc. DEGREE EXAMINATION, NOVEMBER 2023.

Biochemistry — Elective

BIOSTATISTICS

Time : Three hours   Maximum : 75 marks

PART A — (20 marks)

Answer ALL questions.

I. (A) Multiple choice questions: (5 × 1 = 5)

1. Graphs and charts facilitate:

    (a) Comparison of values

    (b) To know the trend

    (c) To know the relationship

    (d) All the above

2. The average of the sum of squares of the deviations about mean is called

    (a) Variance

    (b) Absolute deviation

    (c) Standard deviation

    (d) Mean deviation

3. The mean and variance of binomial distribution are 8 and 4 respectively. Then, $P(X = 1)$ is equal to

    (a) $1/2^8$ (b) $1/2^4$

    (c) $1/2^6$ (d) $1/2^{12}$

4. Whether a test is one sided or two-sided depends on:

    (a) Alternative hypothesis

    (b) Composite hypothesis

    (c) Null Hypothesis

    (d) None of the above

5. A medicine is a treatment applied to

    (a) a field plot

    (b) a patient

    (c) both (a) and (b)

    (d) neither (a) nor (b)

    (B) Fill in the blanks: (5 × 1 = 5)

6. The census data published for city wise population in India will be known as —————— classification.

7. The functional relationship of a dependent variable with independent variables is called ——————.

8. An event which cannot occur is known as ——————— event.

9. Out of two types of error in testing, the more severe error is ———————.

10. Multiple bar diagram has a ——————— of bars for each year or place.

II. Descriptive type questions : (5 × 2 = 10)

11. Define Secondary data.

12. Define Quartile deviation.

13. What is Complementary event?

14. What is Null Hypothesis?

15. Define an Angle.

PART B — (5 × 5 = 25)

Answer ALL questions, choosing either (a) or (b).

16. (a) Mention the characteristics of a good questionnaire.

Or

(b) Explain the sources of collecting data.

17. (a) Find standard deviation and its coefficient.

Salary (in Rs.)	75	80	85	90	95	100
No. of persons	3	7	18	12	6	4

Or

(b) Explain the different types of Correlation.

18. (a) What is the probability that if a card is drawn at random from an ordinary pack of cards, it is

(i) a red card,

(ii) a club,

(iii) one of the card (Jack or Queen or king).

Or

(b) A manufacturer of cutter pins knows that 5% of his product is defective, If he sells cutter pins in boxes of 100 and guarantees that not more than 10 pins will be defective. What is the probability that a box will fail to meet the guaranteed quality?

19. (a) Briefly explain the concept of sampling.

Or

(b) Discuss about Duncan's multiple range test.

20. (a) Draw a pie diagram for the following data:

Item	Food	Clothing	Rent	Medicare	Entertainment
Average Expenditure per Month (Rs.)	2400	200	800	150	450

Or

(b) Write a short note on Pictogram.

PART C — (3 × 10 = 30)

Answer any THREE questions out of Five questions.

21. Briefly explain the four types of classification.

22. Calculate Spearman Rank Correlation coefficient for the given data:

X	68	64	75	50	64	80	75	40	55	4
Y	62	58	68	45	81	60	68	48	50	70

23. Define Normal distribution and explain its chief characteristics.

24. Explain the One way classification in Analysis of variance.

25. Explain the various types of bar diagrams with suitable examples.

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