Reg. No. : ....

Code No. : 6079   Sub. Code : PZOM 33

M.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2021

Third Semester

ZOOLOGY - CORE

BIOSTATISTICS AND BIOINFORMATICS

(For those who joined in July 2017 onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL the questions.

Choose the correct answers :

1. Data originally collected in the process of investigation are known as

    (a) Foreign data   (b) Primary data

    (c) Third data   (d) Secondary data

2. Census is

   (a) The method of planning, organizing and publishing data

   (b) The method in which no data is collected

   (c) The method in which data is collected from each and every unit

   (d) The method in which few units out of the entire population are chosen

3. The mean of ten numbers is 58. If one of the numbers is 40, what is the mean of the other nine?

   (a) 540   (b) 60

   (c) 18   (d) 162

4. Which of the following is NOT a common measure of central tendency?

   (a) Mean   (b) Mode

   (c) Median   (d) Range

5. What is the probability of getting 1 and 5 if a dice is thrown once?

   (a) 1/6   (b) 1/3

   (c) 2/3   (d) 8/9

6. What will be the probability of getting odd numbers if a dice is thrown?

   (a) 1/2   (b) 2

   (c) 4/2   (d) 5/2

7. What is the mean of a chi square distribution with 6 degree of freedom?

   (a) 4   (b) 12

   (c) 6   (d) 8

8. Which of these distributions is used for a testing hypothesis?

   (a) Normal distribution

   (b) Chi-square distribution

   (c) Gamma distribution

   (d) Poison distribution

9. The first secondary database developed was

   (a) PRINTS   (b) PROSITE

   (c) PDP   (d) PIR

10. Which of the following is a sequence alignment tool?

   (a) BLAST   (b) PRINT

   (c) PROSITE   (d) PIR

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words

11. (a) Write the biological data of ratio scale.

Or

(b) Write the source of primary and secondary data.

12. (a) What is chi-square test? Explain its application in biology.

Or

(b) Comment on characteristic of good average.

13. (a) Explain the types of correlation.

Or

(b) Comment on basic concept of probability.

14. (a) Definition of F-test formula.

Or

(b) Write the application of Chi square test with example.

15. (a) Comment on homology.

Or

(b) List out biological databases and retrieval systems.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Explain the significance of the following while collecting of data for a biological investigation (i) nature of sample (ii) accuracy and precision of data (iii) errors in measurement (iv) significant digits in the data.

Or

(b) Explain the random sampling methods.

17. (a) How to construct the Lorenz curve?

Or

(b) Calculate correlation coefficient of the following data.

| Length of fish (cm) | 5 | 3 | 4 | 7 | 6 | 8 | 5 | 3 | 9 | 8 |
| Weight of fish (gm) | 10 | 4 | 6 | 18 | 15 | 21 | 9 | 5 | 22 | 20 |

18. (a) Describe the theorems of probability.

Or

(b) Write the importance of normal distribution.

19. (a) Write the techniques of analysis of variance.

Or

(b) Design the procedure for carrying out the sign test.

20. (a) Explain the following BLAST-FASTA and its biological use.

Or

(b) Explain the nucleic acid sequence databases.

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