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Reg. No. :

Code No. : 8426

Sub. Code : HZOM 23

M.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2014.

Second Semester

Zoology

BIOSTATISTICS AND COMPUTER APPLICATIONS

(For those who joined in July 2012 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer.

1. Which is a graphical representation of the distribution of data?

- (a) probability (b) correlation
(c) histogram (d) none

2. The user does not set the total number of samples in

- (a) continuous sampling
(b) discrete sampling
(c) random sampling
(d) none of these

3. Which is the middle value in the lists of numbers?

- (a) mean (b) median
(c) mode (d) all of these

4. Which is the number that is repeated more often than any others?

- (a) mean (b) median
(c) mode (d) range

5. If two separate sets of independent and identically distributed samples are obtained, the test used is

- (a) independent sample 't' test
(b) paired sample 't' test
(c) overlapping sample 't' test
(d) none



6. Which is the best known of many chisquare test?
 (a) Pearson's (b) Yates
 (c) Likelihood ratio (d) Pormanteau test
7. Measure the extent to which as one variable increases, the other variable tend to increase is given by
 (a) Rank correlation (b) Coefficient average
 (c) Random sampling (d) None
8. Which is a way to test the equality of there or more means at one time by using variances?
 (a) One way Anova (b) Two way Anova
 (c) Random sampling (d) All of them
9. Which is a output device?
 (a) Printer (b) Keyboard
 (c) Microphone (d) All of them
10. WAN means
 (a) Wide Area Network
 (b) Well Art Network
 (c) Wide Around Network
 (d) Wide Allowance Network

PART B — ($5 \times 5 = 25$ marks)

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

Each answer should not exceed 250 words.

11. (a) Explain the uses and construction of Histogram.
 Or
 (b) Discuss the fundamental principles of sampling.
12. (a) The number of peas per pod in 10 pods of sugar peas is given below:
 1, 4, 5, 4, 6, 8, 2, 2, 3, 7.
 Calculate the three important measures of central tendency.
 Or
 (b) Calculate harmonic mean from the following data :
 1, 0.5, 10, 45, 175, 0.01, 4, 11.2.
13. (a) What is statistical inference? Why is estimation an important type of inference?
 Or
 (b) Explain the purpose of Estimation theory.



14. (a) The correlation coefficient for the mean wheat yield and the autumn rainfall was calculated for 20 years and was -0.629 . Test the hypothesis

- (i) $\rho = 0$
(ii) $\rho = -0.5$.

Or

- (b) Explain Randomized Block Design.

15. (a) Explain the uses of E-mail.

Or

- (b) List any five programming languages and discuss its purpose.

PART C — ($5 \times 8 = 40$ marks)

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

Each answer should not exceed 600 words.

16. (a) What type of graphical representation do you use to represent the population density, area, sex distribution of population in different states of a country? Explain with sample data.

Or

- (b) (i) Explain the objectives of representing data in Tables. Also list the components of Table.

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- (ii) Design a single diagram to exhibit the information relating to the causes of death.

Cause of death	Numbers
Diarrhoea and Enteritis	60
Pre maturity and Atrophy	170
Bronchitis and Pneumonia	90

17. (a) The lengths of 200 parasites in the human blood were each measured to the nearest micron given in the following table. Calculate the mean and standard deviation of this distribution.

Length	Frequency
80-89	2
70-79	2
60-69	6
50-59	20
40-49	56
30-39	40
20-29	42
10-19	32

Or

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- (b) The first four central moments of a distribution are 0, 2.3, 0.9 and 15.65. Test the skewness and kurtosis of the distribution.

18. (a) The rates of diffusion of carbon dioxide through two soils of different porosity are given below:

Fine Soil	27,	20,	29,	20,	23,	26,	23,	23,	26,	27
Coarse Soil	30,	23,	30,	32,	28,	25,	26,	33,	20,	25

Test the hypothesis that both the varieties give equal yield.

Or

- (b) Discuss the characteristics and uses of χ^2 test. In an experiment on immunization of cattle from tuberculosis, the following results were obtained:

	Affected	Not Affected	Total
Inoculated	24	32	56
Not Inoculated	52	12	34
Total	76	44	120

Calculate χ^2 and discuss the effect of vaccine in controlling susceptibility to Tuberculosis (5% value of χ^2 for one degree of freedom = 3.84).

19. (a) Explain the steps involved in the analysis of variance. The following table illustrates the sample psychological health ratings of corporate executives in the field of banking, manufacturing and retailing.

Banking	14	16	18		
Manufacturing	14	13	15	22	
Retailing	18	16	19	19	20

Can we consider the psychological health of corporate executives in the given three fields to be equal at 5% level of significance?

Or

- (b) Illustrate the following terms vividly
- Coefficient of multiple correlation
 - Simple correlation coefficient
 - Partial correlation coefficient.

20. (a) Explain the diverse applications of Word Processors.

Or

- (b) Write notes on
- TelNET
 - WAN
 - INTERNET
 - WWW
 - HTML.

