

M.Sc. ZOOLOGY  
FIRST SEMESTER [SPECIAL REPEAT]  
BIostatistics AND RESEARCH METHODOLOGY  
MSZ-101

**SET  
A**

Duration: 3 hrs.

Full Marks: 70

(Objective)

Time: 30 mins.

Marks: 20

Choose the correct answer from the following:

1 × 20 = 20

1. What is the full form of IAEC?  
a. International Animals Ethics Committee  
b. Interim Animals Ethics Committee  
c. Intern Animals Ethics Committee  
d. None of the above
2. For registration under IPR, an invention must meet the criteria of:  
a. Novelty  
b. Non-obviousness  
c. Industrial application  
d. All of the above
3. The term "bioethics" was coined by:  
a. Fritiez Jahar  
b. Fritez Jahr  
c. Fritz Jahr  
d. None of these
4. Who approves the research proposal at the university level where large animals will be used in experiment?  
a. University administrative authority  
b. IAEC  
c. CPCSEA  
d. All of these
5. Which one of the following is the correct name?  
a. Prevention of Cruelty to Animal Act, 1961  
b. The Prevention of Cruelty to Animal Act, 1961  
c. Prevention of (Cruelty to Animal) Act, 1960  
d. None of the above
6. The value which occurs most frequently, is the:  
a. The Median  
b. Mode  
c. Range  
d. None of the above
7. The relationship between mean, median and mode is given by:  
a. Mode = 3Median - 2Mean  
b. Mode = 2Mean - 3 Median  
c. Median = 3Mode - 2Mean  
d. Median = 2Mean - 3 Mode
8. The coefficient of quartile deviation is given by the formula:  
a.  $\frac{Q_3 + Q_1}{Q_3 - Q_1}$   
b.  $\frac{Q_3 - Q_1}{Q_3 + Q_1}$   
c.  $\frac{Q_3 + Q_1}{Q_3 - Q_1}$   
d.  $\frac{Q_3 - Q_1}{Q_3 + Q_1}$
9. .... is also known as root mean square deviation.  
a. Quartile deviation  
b. Standard deviation  
c. Mean deviation  
d. Range

10. Which one of the following is not an average deviation measures of dispersion?
  - a. Quartile deviation
  - b. Mean deviation
  - c. Standard deviation
  - d. None of the above
11. In natural sciences and social sciences, quantitative research is based on the aspect of:
  - a. Quantity or extent
  - b. Quality or extent
  - c. Quality, Quantity and extent
  - d. All of the above
12. Research design is a.....
  - a. Blueprint of a scientific study
  - b. Map of scientific study
  - c. Diagram of scientific study
  - d. None of the above
13. A dependent variable is a variable that is:
  - a. Tested in an experiment
  - b. Not tested in an experiment
  - c. Both a and b
  - d. None of the above
14. Descriptive design is a.....
  - a. Theory-based research method
  - b. Practical based method
  - c. Merit based method
  - d. None of the above
15. Copyright covers:
  - a. Photographs
  - b. Original literary works
  - c. Sound Recording
  - d. All of the above
16. Snowball sampling comes under the category of:
  - a. Random sampling
  - b. Probability sampling
  - c. Quota sampling
  - d. Non probability sampling
17. The sample data for a chi-square test are called:
  - a. Observed proportions
  - b. Observed frequencies
  - c. Expected proportions
  - d. Expected frequencies
18. ANOVA is used to compare:
  - a. Three or more sample means from independent groups
  - b. Two sample means from independent groups
  - c. Three or more sample means from dependent groups
  - d. Two sample means from dependent groups
19. The student's t-test is typically used:
  - a. In comparing two groups to see if their means differ
  - b. In comparing multiple groups to see if their means differ
  - c. In testing the stationarity of a time series
  - d. In testing the goodness of fit of a model
20. Sample is regarded as a subset of?
  - a. Data
  - b. Set
  - c. Distribution
  - d. Population

**( Descriptive )**

Time : 2 hr. 30 mins.

Marks : 50

[ Answer question no.1 & any four (4) from the rest ]

1. What is sampling? Explain about different types of sampling techniques. 2+8=10
2. Write short notes on the following: 5+5=10
  - a) CPCSEA
  - b) IAEC
3. In an experiment on pea-breeding, Mendel obtained the following frequencies of seed, 310 round and yellow, 100 wrinkled and yellow, 104 round and green, 30 wrinkled and green in total of 544. Theory predicts that the frequencies should be in the proportion 9:3:3:1 respectively. Set up proper hypothesis and test it at 5% level of significance. 10
4. What is IPR? Write a note on the different aspects of IPR. 2+8=10
5. Elucidate in detail about various forms of research and its types. 10

Or

What do you understand by copyright violation? Discuss some aspects of Copyright violation with suitable examples of case studies.
6. Explain the concept of Research Design. What are the principles of a sound research design? Discuss some important types of research design. Also mention different parts, need and features of a sound research design. 10

Or

In the light of modern concept discuss Plagiarism with suitable examples.
7. i) Find the mode of the following data. 5+5=10

Class interval	5 - 14	15 - 24	25 - 34	35 - 44	45 - 54	55 - 64
Frequency	6	11	21	23	14	5

- ii) Find the missing frequency x and y in the following frequency distribution table if the total frequency is 100 (i.e. N= 100) and Median is 32.

Class interval	0 - 10	10 -20	20 - 30	30 -40	40 -50	50 -60
Frequency	10	x	25	30	y	10

8. i) Calculate mean deviation from mean values of the following data.

5+5=10

Class interval	0 - 4	4 - 8	8 - 12	12 - 16	16 - 20
Frequency	4	6	8	5	2

- ii) Calculate the Standard deviation from the following data.

Class interval	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
Frequency	5	10	20	40	30	20	10	4

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