REV-01 MSZ/05/10

M.Sc. ZOOLOGY FIRST SEMESTER (REPEAT) BIOSTATISTICS AND RESEARCH METHODOLOGY MSZ-101

[USE OMR SHEET FOR OBJECTIVE PART]

2023/12 SET

Full Marks: 70

Duration: 3 hrs.

Objective )

Time: 30 mins.

Marks: 20

Choose the correct answer from the following:

 $1 \times 20 = 20$ 

- 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 For registration under IPR, an invention must meet the criteria of:

d. All of the above

- a. Novelty
- b. Non-obviousness
- c. Industrial application
- The term "bioethics" was coined by:
- a. Fritiez Jahar

b. Fritez Jahr

c. Fritz Jahr

- d. None of these
- 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
- Which one of the following is the correct name?
  - a. Prevention of Cruelty to Animal Act,
- b. The Prevention of Cruelty to Animal Act, 1961
- c. Prevention of (Cruelty to Animal) Act, 1960
- d. None of the above

- - The value which occurs most frequently, is the:
  - a. The Median

b. Mode

c. Range

- d. None of the above
- 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
- The coefficient of quartile deviation is given by the formula:
  - a.  $Q_3 + Q_1$ Q3+ Q1

Q3-Q1 Q.Q1

c.  $Q_3 + Q_1$ Q3- Q1

- d. Q3-Q1
- .....is also known as root mean square deviation.
  - a. Quartile deviation
- b. Standard deviation

c. Mean deviation

d. Range

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

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## (<u>Descriptive</u>)

Time: 2 hr. 30 mins. Marks: 50

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

1.	What is IPR? Write a note on the different aspects of IPR.	2+8=10
2.	Write short notes on the following: a) CPCSEA	5+5=10

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.

4. What is sampling? Explain about different types of sampling techniques. 2+8=10

5. Elucidate in detail about various forms of research and its types. 10

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.

Or

In the light of modern concept discuss Plagiarism with suitable examples.

7. i) Find the mode of the following data.

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

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5+5=10

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

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.

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

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5+5=10