# M.Sc. ZOOLOGY <br> FIRST SEMESTER <br> TAXONOMY, BIOSYSTEMATICS \& BIOSTATISTICS <br> MSZ-101 <br> (Use separate answer scripts for Objective \& Descriptive) 

Duration : 3 hrs.
Full Marks : 70
( PART-A: Objective )
Marks : 20
Time : 20 min .
$1 \times 20=20$
Choose the correct answer from the following:

1. De Plantis was written by:
a. Theophratus
b. Caesalpino
c. Cuvier
d. Linnaeus
2. Systematic include:
a. Taxonomy and Identification
b. Taxonomy and Classification
c. Taxonomy and Nomenclature
d. Taxonomy and Evolution
3. The taxonomy concerned with cataloging the species, describing the new species, characterizing and naming the species and developing keys for their identification known as:
a. Alpha Taxonomy
b. Beta Taxonomy
c. Gamma taxonomy
d. Evolutionary Taxonomy
4. Identification of amino acids through Chromatogrphy techniques is used in:
a. Cytotaxonomy
b. Chemotaxonomy
c. Molecular taxonomy
d. None
5. The characterization and identification of cell's complete chromosome set is referred to as:
a. Karyogram
b. Ideogram
c. Karyology
d. Karyotyping
6. International code of zoological nomenclature was adapted in:
a. 1951
b. 1901
c. 1971
d. 1891
7. A species name in zoology when derived from a personal name of women ends with:
a. Orum
b. Ae
c. Arum
d. Ensis
8. According to current code of zoological nomenclature the names of family must end with:
a. oidea
b. idae
c. inae
d. ini
9. To determine the correct place of organism in a previously established plan of classification is called:
a. Class
b. Taxonomy
c. Systematic
d. Identification
10. Bionomial system of nomenclature is effective from:
a. $1 / 1 / 1758$
b. $1 / 5 / 1753$
c. $1 / 1 / 1753$
d. $1 / 5 / 1758$
11. Sampling plots must at least cover. $\qquad$ of the area to be sampled.

$$
\begin{aligned}
& \text { a. } 25 \% \\
& \text { c. } 5 \%
\end{aligned}
$$

b. $10 \%$,
d. $50 \%$
12. For soil animal population analysis, the most popular method used is:
a. Line transact
b. Point transact
c. Belt transact
d. Quadrate
13. Line transact is a:
a. Area transact
b. Two dimensional transact
c. One dimensional transact
d. Three dimensional transact
14. The................ point in systematic sampling is randomized.
a. End
b. Mid
c. Start
d. Any random point
15. The transact with a fixed breadth is called:
a. Line
b. Belt
c. Point
d. Loop
16. Simple Correlation coefficient is also known as:
a. Spearman's correlation coefficient
b. Pearson's correlation coefficient
c. Regression analysis
d. None
17. If $0<r<0.25$, then according to Correlation coefficient analysis shows:
a. Weak correlation
b. Strong Correlation
c. Intermediate Correlation
d. None
18. The value of $r_{s}$ in Spearman's correlation coefficient denotes the:
a. Nature of association
b. Magnitude of association
c. Magnitude \& nature of association
d. None
19. Box \& Whisker Plot shows the:
a. Graphs
b. Five number summary
c. Twu number summary
d. Interquartile range
20. Univariate, bivariate \& multivariates are the methods of:
a. Inferential methods
b. Poissons distribution
c. Descriptive methods
d. Binomial distribution

## (PART-B: Descriptive $)$

## - Answer question no. \& any four (4) from the rest ]

1. Write a brief note on biodiversity and Shannon-Weiner index. Calculate
the Shannon-Weiner index for the following data.

| Species | No. of Individuals |
| :--- | :---: |
| Butterfly | 15 |
| Spider | 10 |
| Ant | 7 |
| Leech | 8 |
| Earthworm | 9 |
| Caterpillar | 5 |

2. Enumerate the values of Biological Collections and their importance to society.
3. What is curation? What are the jobs of a curator? Discuss briefly the measure that can be taken by various institutions to manage natural history collections.
4. What is chemotaxonomy? What are the different tools of chemotaxonomy Describe how Electrophoresis technique is use in chemotaxonomy.
5. Discuss the salient features of International Code of Zoological nomenclature
6. Describe the contribution of taxonomy and systematic to the applied biology.
7. A sample of 10 Carp fishes was selected; data about their Length in Cm and Weight in Grams was recorded as shown in the following table. Draw the Scatter diagram and find the Pearson's coefficient correlation between length and weight and comment on it.

| Sl. No | Length $(\mathrm{Cm})$ | Weight (gm) |
| :---: | :---: | :---: |
| 1 | 10 | 175 |
| 2 | 11 | 170 |
| 3 | 10 | 160 |
| 4 | 12 | 210 |
| 5 | 11 | 200 |
| 6 | 14 | 250 |
| 7 | 16 | 350 |
| 8 | 15 | 240 |
| 9 | 18 | 240 |
| 10 | 17 | 300 |

Define a Bar diagram. Calculate the Mean, Median \& Mode of the data

