

**B.Sc. ZOOLOGY**  
**FIRST SEMESTER**  
**BIOSYSTEMATICS AND TAXONOMY**  
**BSZ-102**  
[USE OMR SHEET FOR OBJECTIVE PART]

**SET**  
**A**

Duration: 3 hrs.

Full Marks: 70

( Objective )

Time: 30 mins.

Marks: 20

Choose the correct answer from the following:

1 × 20 = 20

- The Typological Species Concept based on:
  - Monotypic Species
  - Polytypic Species
  - Both a and b
  - None
- Who first even enunciated the concept of the polytypic species?
  - Aristotle
  - Plato
  - Beckner
  - Bernstein
- Who is the first proponent of numerical taxonomy?
  - Sneath
  - Plato
  - Beckner
  - Bernstein
- When did the concept of "Sub-species" come into use?
  - 16<sup>th</sup> century
  - 17<sup>th</sup> century
  - 18<sup>th</sup> century
  - 19<sup>th</sup> century
- The Typological Species Concept was proposed by:
  - Aristotle
  - Plato
  - Both a and b
  - None
- According to the Typological Species Concept, species are:
  - Morphologically distinct organism
  - Anatomically distinct organism
  - Both a and b
  - None
- The points of criticism on Typological Species Concept are:
  - Sexual dimorphism
  - Polymorphism
  - Age differences
  - All
- The morphological approach of taxonomy covers:
  - Shape, size, colour, body structure etc. of the embryo
  - Development process
  - Both a and b
  - None
- This concept is not applicable in case of sibling species because sibling species are alike as they belong to:
  - Different species
  - Same species
  - Both a and b
  - None

10. The limitation of morphological approach of taxonomy occurs in:  
a. Morphologically similar looking species  
b. Similar adaptive character  
c. Physical abnormalities  
d. All of these
11. Chemical killing bottle is replaced by which method to conserve our ecosystem?  
a. Water killing method  
b. Freezing  
c. Heat killing  
d. All of these
12. Dredging method is used to collect:  
a. Insect  
b. Plankton  
c. Butterfly  
d. Deep sea animals
13. Harp net is used to collect:  
a. Bat  
b. Insect  
c. Butterfly  
d. Bird
14. Dry preservation technique includes:  
a. Skinning  
b. Taxidermy  
c. Entire skeleton  
d. All of these
15. Genetic diseases are detected by the help of:  
a. Karyotyping  
b. Electrophoresis  
c. PCR  
d. Amniocentesis
16. The bag of insect net must be of:  
a. Nylon  
b. Polythene  
c. Paper  
d. Cotton
17. What is the best preservation method of fish to preserve colour and tissues?  
a. 10% formaldehyde  
b. 2% formaldehyde  
c. Dry ice or Liquid nitrogen  
d. Ethanol
18. Pelagic tunicates are collected by:  
a. Dip net  
b. Plankton net  
c. Plankton net  
d. Butterfly net
19. The system of nomenclature adopted by ICZN is:  
a. Polynomial nomenclature  
b. Binomial nomenclature  
c. Trinomial nomenclature  
d. Both b and c
20. The binomial system of nomenclature was introduced by:  
a. Carolus Linnaeus  
b. Bentham  
c. Darwin  
d. Simpson

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**( Descriptive )**

Time : 2 hr. 30 mins.

Marks : 50

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

1. Write short notes: (*any two*) 5+5=10
  - a) Chemotaxonomy
  - b) Cytotaxonomy
  - c) Molecular Taxonomy
2. Define taxonomy. Write a note on the stages of taxonomy and importance of Biosystematics. 2+3+5=10
3. Write short notes: (*any two*) 5+5=10
  - a) Nominalistic Species Concept
  - b) Phenetic species concept
  - c) Biological Species Concept
4. Distinguish between: 2.5×4=10
  - a) Monotypic and Polytypic Species
  - b) Allopatric and Sympatric Species
  - c) Peripatric and Parapatric Species
  - d) Cryptic Species and Sibling Species
5. What is taxonomic collection? Write about different equipment used to collect invertebrate species. 2+8=10
6. Define dry preservation and wet preservation. Discuss about pinning and carding method of insect preservation. Describe different types of insect pin. 2+5+3=10
7. Write short notes: (*any two*) 5×2=10
  - a) Chromosome structure
  - b) Karyotyping
  - c) DNA sequencing
  - d) Conventional approach of taxonomy
8. Mention the different types of code of nomenclature and explain the code of nomenclature with special emphasize to ICZN. 3+7=10

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