

PC- 386 CV-19

M.Sc. Zoology (III SEM.)

Examination Del-2020

Compulsory

Paper-II

BIOSYSTEMATICS, TAXONOMY & BIODIVERSITY

Time: Three Hours]

[Maximum Marks: 80

[Minimum Pass Marks: 29

Note: Answer from Both the Section as Directed. The figures in the right hand margin indicate marks.

Section -A

1. Answer the following questions:

1X10

(a) Who is regarded as the "Father of Taxonomy" ?

- i. A.P. De Candolle
- ii. Carolus Linnaeus
- iii. John Ray
- iv. Charles Darwin

(b) In Which book has binomial nomenclature been used for the First time?

- i. Histoire Naturelle
- ii. Historia Naturalis
- iii. Historia Plantarum
- iv. Systema Naturae.

(c) Arrangement of Taxa is Called?

- i. Analogy
- ii. Taxonomy
- iii. Homology
- iv. Hierachy.

(d) A species is Taxonomically:

- i. A fundamental unit in the phylogenetic history of organism.
- ii. A group of evolutionary related population
- iii. A base of category to which most taxonomic information is attached.
- iv. A population with common characteristics as evolutionary base of variation.

(e) Six kindom Classification is based on the sequence of :

- i. Transfer RNA genes
- ii. Ribosomal RNA genes
- iii. Messenger RNA genes
- iv. Nitrogenous bases in DNA.

(f) Taxonomy based on identification of evolutionary units within species by determining their genetical interrelationship is called?

- i. Chemotaxonomy
- ii. Numerical Taxonomy
- iii. Biochemical Taxonomy
- iv. Experimental Taxonomy.

(g) What are the three levels of biodiversity?

- i. Family, genus, Class diversity
- ii. Number, Biomass, energy diversity
- iii. Genus, Community biosphere diversity
- iv. Genetics, Species and ecosystem diversity.

- (h) Hotspot is related to?
- Biodiversity
 - Ecological efficiency
 - Niche
 - Ecological pyramid.
- (i) Which one is not observed in biodiversity hotspot?
- Less interspecific Competition
 - Species richness
 - Endemism
 - Accelerated Species loss.
- (j) Main cause behind destruction of biodiversity is:
- Deforestation
 - Illegal hunting
 - Air pollution
 - Interspecific competition.

2. Write Short Notes on the following:

2X5

- Taxonomic characters
- Cytotaxonomy
- Process of curation
- Types of biodiversity
- Species diversity

Section –B

Answer all questions:

15X4

3. Describe biosystematics and importance and applications of biosystematics in biology?

OR

Write Brief notes on the following:

- Chemotaxonomy
- Basic Concepts of biosystematics.

4. Describe the Species Concepts and Species Category?

OR

Describe the Mechanisms of Speciation in panmictic and apomictic Species?

5. Give a detailed account of process of typification and different Zoological types?

OR

Answer Any two to the following:

- International Code of Zoological Nomenclature (ICZN)
- Taxonomic Collection and preservation
- Taxonomic Keys and their merits and demerits.

6. Describe the Shannon-Weiner index?

OR

Write brief notes on the following:

- Hotspot of Biodiversity
- Threats to Biodiversity.