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(NEP-2020)

(1st Semester)

ZOOLOGY (MAJOR)

(Systematics and Fundamental Concepts)

Full Marks : 75

Time : 3 hours

The figures in the margin indicate full marks for the questions

(SECTION : A—OBJECTIVE)

(Marks : 10)

Tick (✓) the correct answer in the brackets provided :

1×10=10

1. Which one of the following is not covered under taxonomy?

(a) Alpha taxonomy ()

(b) Delta taxonomy ()

(c) Beta taxonomy ()

(d) Gamma taxonomy ()

8. _____ is the key to speciation of populations.
- (a) Reproductive health ()
(b) Reproductive isolation ()
(c) Population growth ()
(d) Extinction ()
9. Which type of speciation enables production of hybrids between two species?
- (a) Allopatric () (b) Parapatric ()
(c) Bottleneck () (d) Sympatric ()
10. Evolutionary trees based on descent from shared ancestors are called
- (a) phylogenies () (b) sequences ()
(c) family trees () (d) clades ()

(SECTION : B—SHORT ANSWERS)

(Marks : 15)

Write short notes on *five* of the following, taking at least *one* from each Unit :

3×5=15

UNIT—I

1. Taxonomic hierarchy
2. Concept of kingdom

UNIT—II

3. Archaeobacteria
4. Phylogenetic species concept

UNIT—III

5. Sympatric speciation
6. Phylogenetic tree

UNIT—IV

7. von Baer's law
8. DNA in molecular phylogeny

(SECTION : C—DESCRIPTIVE)

(Marks : 50)

Answer *five* of the following questions, taking at least *one* from each Unit : 10×5=50

UNIT—I

1. What do you mean by binomial nomenclature? Explain in detail. 2+8=10
2. What is priority? Explain priority rules. 2+8=10

UNIT—II

3. Discuss the discovery of Archaea and the development of domain system. 10
4. What is species? Discuss morphological species concept. 2+8=10

UNIT—III

5. Explain Scala naturae *vs* the tree of life. 10
6. Define cladogram. Explain its features and uses. 2+8=10

UNIT—IV

7. Describe the theory of spontaneous generation based on Francesco Redi and John Needham. 10
8. What is pangenesis? Describe Galton's experiment and how it contradicts pangenesis. 2+8=10
