

2017

ZOOLOGY

( Major )

Paper : 1-1

( **Biosystematics and Taxonomy** )

*Full Marks : 60*

*Time : 3 hours*

*The figures in the margin indicate full marks  
for the questions*

1. Choose and write the correct answer :  $1 \times 7 = 7$

(a) Who is known as the father of taxonomy?

(i) Mendel

(ii) Linnaeus

(iii) Cronquist

(iv) Hubbs.

(b) Beta taxonomy concerns itself with

(i) analysis of infra-specific variation

(ii) description of new species

(iii) defining the boundaries between species

(iv) arrangement of species into a natural system of classification

- (c) The species that are reproductively isolated but morphologically identical are referred as
- (i) allopatric species
  - (ii) cryptic species
  - (iii) sibling species
  - (iv) sympatric species
- (d) Classification of organisms with the help of chromosome number and type is called
- (i) karyotaxonomy
  - (ii) cytotaxonomy
  - (iii) Both (i) and (ii)
  - (iv) numerical taxonomy
- (e) Species that are divided into two or more sub-species are called
- (i) monotypic species
  - (ii) polytypic species
  - (iii) sibling species
  - (iv) None of the above
- (f) The purpose of fixation of species is
- (i) to prevent autolysis
  - (ii) to prevent degradation of tissue
  - (iii) to coagulate and stabilize protein
  - (iv) All of the above

(g) A taxonomic key which has two choices at each step is

(i) dichotomous

(ii) polytomous

(iii) diaretic

(iv) diploid

2. Distinguish between the following :  $2 \times 4 = 8$

(a) Cladistics and evolutionary classification

(b) Monophyletic and polyphyletic taxon

(c) Genetical species and evolutionary species

(d) Syntype and lectotype

3. Write short notes on any three of the following :  $5 \times 3 = 15$

(a) Binomial nomenclature

(b) Cytotaxonomy

(c) Cladism

(d) Biological species concept

(e) Curation

4. What are the stages of taxonomy? Discuss the contribution of Linnaeus in the field of systematics.  $3 + 7 = 10$

Or

What is taxonomy? Write the differences between systematics and taxonomy. Describe briefly the contribution of taxonomy in applied zoology.  $2+2+6=10$

5. What are the modern aspects of systematics? Discuss the molecular aspects applied in the study of biosystematics.  $4+6=10$

Or

What is classification? Write down the theories of biological classification.  $2+8=10$

6. Enumerate the value of biological collections and their importance to society.  $5+5=10$

Or

What is taxonomic key? State its utility in taxonomic work. Write a brief note on bracket key and circular key.  $2+2+6=10$

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