

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 : 1×7=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

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(Continued)

- (g) A taxonomic key which is used at each step is
- (i) dichotomous
 - (ii) polytomous
 - (iii) diaretic
 - (iv) diploid
2. Distinguish between the following
- (a) Cladistics and classification
 - (b) Monophyletic and polyphyletic
 - (c) Genetical species and biological species
 - (d) Syntype and lectotype
3. Write short notes on the following :
- (a) Binomial nomenclature
 - (b) Cytotaxonomy
 - (c) Cladism
 - (d) Biological species concept
 - (e) Curation
4. What are the stages of taxonomic classification? Mention the contribution of Linnaeus to systematics.

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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. $2+2+6=10$

2017

ZOOLOGY

(Major)

Paper : 1·2

[Animal Diversity (Invertebrates)]

Full Marks : 60

Time : 3 hours

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

1. Answer the following questions : 1×7=7

- (a) Name a multinucleate protozoa.
- (b) Name any one type of spicules found in Porifera.
- (c) What is the function of statocyst in prawn?
- (d) What is a hexacanth?
- (e) What is hermaphroditism?
- (f) Which larva of Mollusca is an ectoparasite of fishes?
- (g) Name the larval forms of Asterias.

2. Answer the following questions : $2 \times 4 = 8$

- What is hepatopancreas? How does it help in digestion in prawn?
- Write the significance of polymorphism in Siphonophora.
- Describe the salient features of Miracidium larva.
- Describe the structure and function of compound eye.

3. Answer any three questions : $5 \times 3 = 15$

- Describe the locomotion in protozoa.
- What are endoparasites? Describe the parasitic adaptation of *Ascaris lumbricoides*.
- Write a note on the larval forms of Echinodermata.
- Why is *Peripatus* known as connecting link between Annelida and Arthropoda?
- Define pre-erythrocytic schizogony of sporozoite in liver of infected animal.

4. Answer the following questions : $10 \times 3 = 30$

- What is nutrition? Describe the mode of nutrition in protozoa with suitable examples. $2 + 8 = 10$

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Or

- What is canal system? Draw a diagram of canal system found in Hydra.
- Give details of pathogenicity and propagation of *Ancylostoma duodenale*.

Or

- Describe the life-history and adaptation of *Fasciola hepatica*.
- Describe the salient features of phylum Mollusca and Gastropoda up to order level with examples.

Or

- Write a note on water vascular system in Echinodermata with diagram.

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