

3 (Sem-1/CBCS) ZOO HC 1

2019

ZOOLOGY

(Honours)

Paper : ZOO-HC-1016

(Theory)

Full Marks : 60

Time : 3 hours

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

1. Choose the correct answer (any seven) : $1 \times 7 = 7$

**(a) Which of the following belongs to
Anthozoa?**

(i) Aurelia

(ii) Fungia

(iii) Stercularia

(iv) Dugesia

(b) Which of the following does not have any alimentary canal?

- ☒ (i) *Taenia*
- (ii) Frog
- (iii) Earthworm
- (iv) *Ascaris*

(c) The infective stage of *Entamoeba histolytica* is

- (i) sporozoite
- (ii) minuta form
- ☒ (iii) mature cyst
- (iv) trophic form

(d) Classification of phylum Porifera mainly based on

- ☒ (i) canal system
- ☒ (ii) spicules
- (iii) shape of choanocytes
- (iv) archaeocytes

(e) Animals devoid of respiratory, excretory and circulatory organs are

- (i) liver fluke
- ☒ (ii) tapeworms
- (iii) threadworms
- (iv) sponges

(f) In flatworms, the excretory organs are

- (i) archaeocytes
- (ii) solenocytes
- (iii) nephrons
- ☒ (iv) nephridia

(g) *Entamoeba histolytica* differs from *Amoeba proteus* due to absence of

- ☒ (i) contractile vacuole
- (ii) pseudopodia
- (iii) binary fission
- (iv) multiple fission

(h) Secondary host of *Taenia solium* is

- (i) cow
- ☒ (ii) man
- (iii) sheep
- ☒ (iv) pig

(i) The body of sponges is mainly composed of

(i) spongin fibres

(ii) mesoglea

(iii) spicules

(iv) nematoblasts

2. Match the following Column—I with Column—II (any four) : $2 \times 4 = 8$

(a)	Column—I	Column—II
	(i) Coller cell	(1) Amphiblastula II
	(ii) Sycon	(2) Glass rope sponge III
	(iii) Hyalonema	(3) Storage cells IV
	(iv) Theocytes	(4) Choanocytes I

(b)	Column—I	Column—II
	(i) Cilia	(1) Flagella (IV)
	(ii) Minuta form	(2) Plasmodium (III)
	(iii) Signet ring	(3) Entamoeba (II)
	(iv) Euglena	(4) Paramoecium (I)

(c)	Column—I	Column—II
	(i) Ctenophora	(1) Limnea
	(ii) Obelia	(2) Gammule
	(iii) Fasciola	(3) Medusa
	(iv) Freshwater sponges	(4) Swimming plates

(d)	Column—I	Column—II
(i) <i>Euglena</i>	(1)	Medusa III
(ii) Ctenophores	(2)	Offense and defense IV
(iii) Obelia	(3)	Photosynthetic protist I
(iv) Dactylozoid	(4)	Hermaphrodite II

(e)	Column—I	Column—II
(i) Anthozoa	(1)	Radial or biradial
(ii) Hydrozoa	(2)	Medusoid
(iii) Scyphozoa	(3)	Polypoid
(iv) Cnidaria	(4)	Pennatula

(f)	Column—I	Column—II
(i) Statocyst	(1)	Coral formation
(ii) Ctenophora	(2)	Skeleton of a solitary coral
(iii) Corallite	(3)	Sense organ
(iv) Millepora	(4)	Triploblastic origin of tissue

3. Answer any *three* from the following questions : 5×3=15

(a) Classify the phylum Nemathelminthes with general characters up to class and give examples.

(b) Write about the evolutionary significance of Ctenophora.

- (c) Discuss about the different types of locomotory organs in Protista. Add a note on their significance.
- (d) Write about the pathogenicity of *Wuchereria bancrofti*.
- (e) Discuss about the different types of spicules of sponges with necessary diagram.

4. Answer any *three* from the following : $10 \times 3 = 30$

- (a) Discuss the life history of *Plasmodium vivax* with necessary diagrams. Add a note on its pathogenicity. $8+2=10$
- (b) Describe the canal system in Porifera with necessary illustrations. 10
- (c) Write an essay on the evolution of symmetry and segmentation of Metazoa with necessary illustrations. 10
- (d) Discuss the life cycle of *Taenia solium* with necessary diagrams. 10

(7)

(e) Write short notes on any *two* from the following : 5×2=10

- (i) Parasitic adaptation in helminths
- (ii) Metagenesis in obelia
- (iii) Corals and coral reefs

(f) Write an essay on polymorphism in Cnidaria. 10

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3 (Sem-1/CBCS) ZOO HC 2

2019

ZOOLOGY

(Honours)

Paper : ZOO-HC-1026

(Principles of Ecology)

(Theory)

Full Marks : 60

Time : 3 hours

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

1. Choose the correct answer : 1×7=7

(a) Which is the first process in ecological succession?

☒ (i) Nudation

(ii) Migration

(iii) Ecesis

(iv) Aggregation

(b) Which is not the characteristic of a population?

(i) Natality

(ii) Mortality

☒ (iii) Stratification

(iv) Sex ratio

(c) The ratio between energy flow at different points in a food chain is

- (i) ecological capacity
- ✓ (ii) ecological efficiency
- (iii) ecological potential
- (iv) ecological assimilation

(d) Which of the following is a 'k'-selected species?

- (i) Fungus
- ✓ (ii) Human
- (iii) Grass
- (iv) Beetle

(e) The structural and functional unit of ecology is

- (i) biome
- ✓ (ii) ecosystem
- (iii) biosphere
- (iv) All of the above

(f) In addition to their role in ecosystem, the value of wildlife is also found in

- (i) education
- (ii) recreation
- (iii) aesthetics
- ✓ (iv) All of the above

(g) The ecological study of individual organism or species is called

- ✓ (i) autecology
- (ii) community ecology
- (iii) synecology
- (iv) population ecology

2. Write short notes on the following : $2 \times 4 = 8$

- (a) Laws of limiting factors
- (b) Gause's competitive exclusion principle
- (c) Density-dependent population regulation.
- (d) Detritus food chain

3. Write on/Answer any *three* of the following :

$5 \times 3 = 15$

- (a) The strategies associated with 'r'- and 'k'-selected species
- (b) The role of ecology in wildlife conservation
- (c) Compare and contrast between exponential and logistic growth.
- (d) Concepts and utilities of life tables in population ecology
- (e) Lotka-Volterra equation for competition and predation

(4)

4. Elaborate on the different group attributes of a population. 10

Or

Discuss the theories pertaining to climax community. 10

5. Elaborate with an example, the concept of ecological succession. 10

Or

Describe the process of nitrogen cycle. 10

6. What is a food chain? What are its basic types and forms? Highlight one example explaining the mode of energy flow in an ecosystem. 2+5+3=10

Or

Write short notes on the following : 5+5=10

(a) Survivorship curves

(b) Age and sex ratio
