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3 (Sem-1/CBCS) ZOO HC 1

2020

(Held in 2021)

ZOOLOGY

(Honours)

Paper : ZOO–HC–1016

***(Non-Chordates–I : Protista to
Pseudocoelomates)***

Full Marks : 60

Time : Three hours

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

1. Choose the correct answer : ***(any seven)***
1×7=7

(a) Sexual phase in life history of Plasmodium occurs in :

- (i) Blood of man
- (ii) Gut of mosquito
- (iii) Salivary gland of mosquito
- (iv) Liver cell of man.

Contd.

- (b) Sponges transport their food by :
- (i) Pinacocytes
 - (ii) Trophocytes
 - (iii) Choanocytes
 - (iv) Porocytes.
- (c) Dead man's finger is the common name of :
- (i) Fungia
 - (ii) Alcyonium
 - (iii) Heliopora
 - (iv) Corallium.
- (d) The stage hatched from the ingested egg of Ascaris is called :
- (i) Bladder Worm
 - (ii) Hexacanth
 - (iii) Maggot
 - (iv) Rhabditis larva.

(e) Polyps helps in :

- (i) Reproduction
- (ii) Nutrition
- (iii) Excretion
- (iv) Respiration.

(f) A digenic nematode parasite is :

- (i) Filaria
- (ii) Ancylostoma
- (iii) Fasciola
- (iv) Enterobius.

(g) The fusing nuclei come from the same cell in Automixis :

- (i) Cytogamy
- (ii) Paedogamy
- (iii) Autogamy
- (iv) Isogamy.

(h) Nematocysts are found in :

(i) Porifera

(ii) Cnidaria

(iii) Ctenophora

(iv) Platyhelminthes.

(i) Larva of obelia is :

(i) Amphiblastula

(ii) Scyphistoma

(iii) Planula

(iv) Parenchymula.

2. Match the following **Column-I** with **Column-II : (any four)** 2×4=8

(a)	Column-I	Column-II
(i)	Schizont	(1) Paramecium
(ii)	Endomixis	(2) Venus' flower baskets
(iii)	Rhizopoda	(3) Plasmodium
(iv)	Euplectella	(4) Entamoeba

<i>(b)</i>	Column-I	Column-II
<i>(i)</i>	Hexacanth	(1) Fasciola
<i>(ii)</i>	Prostate gland	(2) Wuchereria
<i>(iii)</i>	Pseudocoel	(3) Taenia
<i>(iv)</i>	Viviparity	(4) Ascaris

<i>(c)</i>	Column-I	Column-II
<i>(i)</i>	Entamoeba	(1) Cestoda
<i>(ii)</i>	Obelia	(2) Calcarea
<i>(iii)</i>	Taenia	(3) Lobosa
<i>(iv)</i>	Scypha	(4) Hydrozoa

<i>(d)</i>	Column-I	Column-II
<i>(i)</i>	Atoll	(1) Cnidaria
<i>(ii)</i>	Colloblasts	(2) Spicules
<i>(iii)</i>	Vellum	(3) Coral island
<i>(iv)</i>	Scleroblasts	(4) Ctenophora

- (e) **Column-I** **Column-II**
- (i) Eyespot (1) Platyhelminthes
- (ii) Polymorphism (2) Ctenophora
- (iii) Biradial Symmetry (3) Miracidium
- (iv) Freshwater snail (4) Siphonophora
- (f) **Column-I** **Column-II**
- (i) Liver fluke (1) Ascariasis
- (ii) Filarial worm (2) Taeniasis
- (iii) Tapeworm (3) Fascioliasis
- (iv) Roundworm (4) Elephantiasis

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

- (a) Discuss about the different types of metamerism in Animal kingdom. Add a note on their significance.
- (b) Classify the phylum porifera upto class with example and mention six distinctive characters of the phylum.

- (c) Write about the parasitic adaptation in *Taenia solium*.
- (d) Write briefly about the flagellar movement of *Euglena*.
- (e) Discuss the mode of infection and transmission of Elephantiasis.
4. Answer **any three** from the following questions : $10 \times 3 = 30$
- (a) Describe the process of conjugation in paramecium with suitable diagram. Write on its significance. $6 + 4 = 10$
- (b) What are the skeletal elements of sponges? Describe the development of spicules and comment on the functions of spicules in sponges. $2 + 4 + 4 = 10$
- (c) Write a comparative account of the polyp and medusa of obelia in terms of differences and similarities. Mention what medusa exhibit advanced features over polyp. $7 + 3 = 10$
- (d) What is Ctenophora? Write the relationship with sponges and cnidaria. $2 + 8 = 10$

(e) Describe the life history and pathogenicity of the organism causing amoebiasis with suitable diagram.

6+4=10

(f) Write a brief account of life cycle of Fasciola. Mention the preventive and control measures of Liver rot disease.

5+5=10

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3 (Sem-1/CBCS) ZOO HC 2

2020

(Held in 2021)

ZOOLOGY

(Honours)

Paper : ZOO-HC-1026

(Principles of Ecology)

Full Marks : 60

Time : Three hours

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

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

(a) The random pattern of distribution of the individuals of a population over space is :

(i) Natality

(ii) Density

(iii) Dispersion

(iv) Both (ii) and (iii).

Contd.

- (b) Shelford's law of tolerance suggests that organisms with a wide tolerance limit for environmental factors show :
- (i) Narrow distribution with low population
 - (ii) Wide distribution with high population
 - (iii) Narrow distribution with high population
 - (iv) Wide distribution with low population.
- (c) The ability of a population to increase under ideal environmental conditions is :
- (i) Carrying capacity
 - (ii) Absolute natality
 - (iii) Biotic potential
 - (iv) Natality.
- (d) Soil changes due to erosion is an example of :
- (i) Allogenic succession
 - (ii) Autogenic succession
 - (iii) Computational succession
 - (iv) Emigrational succession.
- (e) Which of the following is mainly responsible for wildlife extinction ?
- (i) Pollution
 - (ii) Hunting
 - (iii) Habitat destruction
 - (iv) All of the above.

- (f) Population size is best represented by :
- (i) Density
 - (ii) Mortality
 - (iii) Natality
 - (iv) Community.
- (g) What is an edge effect ?
- (i) Community complexity
 - (ii) Community classification
 - (iii) Community stability
 - (iv) Community diversity at the transition boundary.

2. Write short notes on the following :
(any four) 2×4=8

- (a) Nutrient cycling
- (b) Ecological efficiency
- (c) Ecesis
- (d) Abiotic components of ecosystem
- (e) Biome
- (f) Kaziranga National Park.

3. Answer the following : **(any three)** 5×3=15

- (a) Autecology *vs* Synecology.
- (b) Density-independent factors of population regulation.

- (c) Vertical stratification of a community.
 - (d) Concept of ecotone with *one* example.
 - (e) Life tables and survivorship curves.
4. Discuss the concepts of Gause's competitive exclusion principle with *one* example. 10

OR

Highlight the major types of population interactions. Elaborate the Lotka-Volterra equations for competition and predation.

4+6=10

5. Discuss the different types of community characteristics with suitable examples. 10

OR

Write short notes on : 5+5=10

- (a) Ecological pyramid
- (b) Human-modified ecosystem.

6. Highlight on the strategies involved for *ex-situ* conservation and management of wildlife. 10

OR

Compare and contrast between 'r'- and 'K'-strategies with necessary examples.

5+5=10