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3 (Sem-1/CBCS) ZOO HC 1

2021

(Held in 2022)

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) In Paramecium the division of macronucleus during binary fission is
- (i) mitotic
  - (ii) amitotic

Contd.

- (iii) meiotic
  - (iv) prenuclear
- (b) Water enters the body of sponges through
- (i) ostia
  - (ii) osculum
  - (iii) radial canal
  - (iv) spongocoel
- (c) Infective stage of *Entamoeba histolytica* is
- (i) sporozoite
  - (ii) quadrinucleate cyst
  - (iii) trophozoite
  - (iv) spore
- (d) Ctenophores display
- (i) spherical symmetry
  - (ii) cylindrical symmetry
  - (iii) biradial symmetry
  - (iv) bilateral symmetry

- (e) 'Portuguese man of war' is the common name of
- (i) Velella
  - (ii) Physalia
  - (iii) Aurelia
  - (iv) Pennatula
- (f) Rhabdites are characteristic of
- (i) Cnidaria
  - (ii) Ctenophora
  - (iii) Platyhelminthes
  - (iv) Nematelminthes
- (g) The first larval form in liver fluke is
- (i) redia
  - (ii) metacercaria
  - (iii) miracidium
  - (iv) cercaria
- (h) Female culex mosquito is the vector of
- (i) malaria
  - (ii) dengue
  - (iii) elephantiasis
  - (iv) ascariasis

(i) In which of the following the nuclear dimorphism is seen ?

- (i) Entamoeba
- (ii) Euglena
- (iii) Paramecium
- (iv) Trypanosoma

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

(a) <b>Column-I</b>	<b>Column-II</b>
(i) Oligohymenophora	(1) Euglena
(ii) Lobosa	(2) Plasmodium
(iii) Phytomastigophora	(3) Paramecium
(iv) Sporozoa	(4) Amoeba

  

(b) <b>Column-I</b>	<b>Column-II</b>
(i) Metagenesis	(1) Porifera
(ii) Pinocytosis	(2) Cnidaria
(iii) Spicule	(3) Protista
(iv) Colloblast	(4) Ctenophora

<b>(c) Column-I</b>	<b>Column-II</b>
(i) Glass water sponge	(1) Beroe
(ii) Coral reef	(2) Schizogony
(iii) Asexual cycle	(3) Hyalonema
(iv) Ctenophora	(4) Atoll

<b>(d) Column-I</b>	<b>Column-II</b>
(i) Vorticella	(1) Flagella
(ii) Euglena	(2) Myonemes
(iii) Cillia	(3) Pseudopodia
(iv) Amoeba	(4) Paramecium

<b>(e) Column-I</b>	<b>Column-II</b>
(i) Spongilla	(1) Food capture process of Protista
(ii) Mesoglea	(2) Freshwater sponge
(iii) Phagocytosis	(3) Minuta form
(iv) Entamoeba hystolytica	(4) Fibrous connective tissue

(f) Column-I	Column-II
(i) Flame cell	(1) Developmental stage of Tapeworm
(ii) Nematocysts	(2) Organ of excretion in Flatworm
(iii) Bladder worm	(3) Protective organ of Cnidaria
(iv) Binary fission	(4) Asexual reproduction in Protozoa

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

- (a) Explain the phase of ciliary movement in Protista with suitable diagram.
- (b) Mention the distinguishing characters of phylum, *Ctenophora*.
- (c) Discuss the role of intermediate host in propagation of *Fasciola*.
- (d) Write the process of endomixis in *Paramecium* with a proper diagram.
- (e) Describe the mode of infection and transmission of *Wuchereria bancrofti*.

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

- (a) Describe the asexual cycle of *Plasmodium vivax* with suitable diagram. Mention the pathogenicity of *Plasmodium*.  $7+3=10$
- (b) What is canal system ? Write the canal system in Sycon with its significance.  $2+6+2 = 10$
- (c) What is polymorphism ? Describe polymorphism in hydrozoa mentioning the role of zooids through illustration.  $2+8=10$
- (d) Define metamerism. Write on various theories of origin of metamerism and its significance.  $2+(6+2)=10$
- (e) What is parasitic adaptation ? Discuss on morphological and physiological adaptation encountered in helminths.  $2+8=10$
- (f) What are sexual dimorphic characters in *Ascaris* ? Describe the life cycle with diagram. Write the control measure of ascariasis .  $2+6+2=10$

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**3 (Sem-1/CBCS) ZOO HC 2**

**2021**

**(Held in 2022)**

**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) \_\_\_\_\_ is a series of changes that occur in a community over time after disturbances.

(i) Community succession

(ii) Ecological succession

(iii) Population succession

(iv) Tertiary succession

Contd.



(b) As per the competitive exclusion principle, no two species can occupy the same

(i) range

(ii) territory

(iii) niche

(iv) habitat

(c) Resource partitioning is best described by which of the following statements ?

(i) Slight variation in niche allows closely related species to co-exist.

(ii) Two species can co-evolve and occupy the same niche.

(iii) Species diversity is maintained by switching between prey species.

(iv) All of the above

(d) An animal with bright colouration is

most likely a

- (i) predator
- (ii) poisonous
- (iii) competitor
- (iv) prey

(e) \_\_\_\_\_ is when two or more species live in close association.

- (i) Predation
- (ii) Competition
- (iii) Symbiosis
- (iv) All of the above

(f) Science that deals with the relationships between living organisms with their physical environment and with each other is called

(i) biology

(ii) environmental science

(iii) ecology

(iv) All of the above

(g) The term 'ecosystem' was proposed by

(i) A. G. Tansley

(ii) E. P. Odum

(iii) Karl Mobius

(iv) G. F. Gause

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

- (a) Ecological succession
- (b) Food web
- (c) Ecotone
- (d) Carrying capacity
- (e) Shelford's law of tolerance
- (f) Ecological pyramid

3. Answer the following : (any three)  $5 \times 3 = 15$

- (a) Lotka-Volterra equation
- (b) r-and K-selection
- (c) Types of food chains
- (d) Human modified ecosystem
- (e) Wildlife conservation : *Ex-situ*

4. Elaborate on the laws of limiting factors with appropriate examples. 10

Or

Distinguish between unitary and modular populations. Elaborate with one example each on life tables and fecundity tables.

$$5+(2\frac{1}{2}+2\frac{1}{2})=10$$

5. Discuss the concept of population regulation with special reference to density-dependent factors. 10

Or

What do you understand by vertical stratification? Explain with examples the concepts of species richness, dominance, diversity and abundance.  $2+(2+2+2+2)=10$

6. Write short notes on : 5+5=10

(a) Nitrogen cycle

(b) Ecological pyramids

**Or**

Discuss the theories pertaining to climax community. Add a note on exponential growth of a population.

6+4=10

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