Total number of printed pages–8

3 (Sem–1/CBCS) ZOO HC 1

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) Euglena belongs to class

(i) Zoomastigophora

(ii) Mastigophora

(iii) Actinopoda

(iv) Phytomastigophora

Contd.

(b) Flagellated cell in sponges are called

(i) Pinacocytes

(ii) Choanocytes

(iii) Porocytes

(iv) Thesocytes

(c) Defence structure in Cnidaria is called

(i) Blastostyles

(ii) Gonozoids

(iii) Nematocysts

(iv) Nectocalyx

(d) The infective stage to primary host of *Fasciola* is

(i) Miracidium

(ii) Sporocyst

(iii) Metacercaria

(iv) Cercaria

(e) Beroe is the example of

(i) Porifera

(ii) Ctenophora

(iii) Cnidaria

(iv) Platyhelminthes

(f) In Protista the division of parent organism into several daughter individuals is by

(i) Plasmotomy

(ii) Budding

(iii) Multiple fission

(iv) Binary fission

(g) Elephantiasis is transmitted by

(i) Mosquito

(ii) Housefly

(iii) Bedbug

(iv) Fruitfly

(h) Infective stage of *Ascaris* to man is

(i) fertilized egg prior to development

(ii) embryonated eggs

(iii) larva after third moult

(iv) larva after fourth moult

(i) Polymorphism is the phenomenon found in the class

(i) Anthozoa

(ii) Scyhozoa

(iii) Hydrozoa

(iv) Cubozoa

(j) Cuticle of *Ascaris* is adapted for
- (i) respiration
- (ii) defence from host
- (iii) locomotion
- (iv) reproduction

(k) Intermediate host in the life cycle of *Fasciola hepatica* is
- (i) Pig
- (ii) Snail
- (iii) Crab
- (iv) Rat flea

(l) Metridium is commonly known as
- (i) Sea fur
- (ii) Sea pen
- (iii) Sea anemone
- (iv) Sea fan

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

(a)

Column–I	**Column–II**
(i) Euspongia	(i) Amoeba
(ii) Pseudopodia	(ii) Planula larva
(iii) Plasmodium	(iii) Bath Sponge
(iv) Cnidaria	(iv) Schizogony

(b)

Column–I	**Column–II**
(i) Hydrozoa	(i) Six ray Spicule
(ii) Pinacoderm	(ii) Cestoidea
(iii) Hexactinellida	(iii) Polymorphism
(iv) Anaerobic respiration	(iv) Scypha

(c)

Column–I	**Column–II**
(i) Gorgonia	(i) Pennatula
(ii) Alcyonium	(ii) Sea fan
(iii) Euplectella	(iii) Dead man's finger
(iv) Sea pen	(iv) Venus's flower basket

(d)

Column–I	**Column–II**
(i) Paramecium	(i) Parenchymula
(ii) Muscular Pharynx	(ii) Cnidaria
(iii) Diploblastic	(iii) Filter feeder
(iv) Porifera	(iv) Aschelminthes

(e)

Column–I	**Column–II**
(i) Microfilaria	(i) Obelia
(ii) Comb Jelly	(ii) Trematoda
(iii) Polyp	(iii) Ctenophora
(iv) Fasciola	(iv) Elephantiasis

(f)

Column–I	Column–II
(i) Proglottids	(i) Ostia and Osculum as opening
(ii) Ctenophora	(ii) Cnidaria
(iii) Porifera	(iii) Comb like ciliary plate
(iv) Stinging cell	(iv) Large number of segments

(g)

Column–I	Column–II
(i) Brain Coral	(i) Physalia
(ii) Pneumatophore	(ii) Coral reef
(iii) Pinocytosis	(iii) Meandrina
(iv) Attol	(iv) Protista

(h)

Column–I	Column–II
(i) Offence and Defense	(i) Euglena
(ii) Palmella stage	(ii) Spongocoel
(iii) Sporulation	(iii) Dactylozooid
(iv) Porifera	(iv) Amoeba

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

(a) Write the process of transverse binary fission in *Paramecium* with proper diagram.

(b) Explain different type of flagella movement of *Protista* with suitable diagram.

(c) Mention the function of canal system in *Porifera*.

(d) Describe the defense mechanism in *Cnidaria*.

(e) Discuss the resemblance and differences of *Ctenophora* with *Cnidaria*.

(f) Write briefly the parasitic adaptation of *Ascaris*.

(g) Write erythrocytic cycle of *Plasmodium* with suitable diagram.

(h) Draw a neat and labelled diagram of life cycle of *Fasciola hepatica*.

4. Answer ***any three*** from the following questions : 10×3=30

(a) Describe the locomotary organelles of protozoa. Write briefly the amoeboid movement specially mention Sol-gel theory. 6+4=10

(b) What is skeleton in sponges? Give detail account on types and development of spicules. 2+4+4=10

(c) What is amoebiasis? Describe the life history and pathogenesis of the organism causing amoebiasis. 1+5+4=10

(d) Describe evolution of symmetry and segmentation of Metazoa. 5+5=10

(e) What is a coral reef? Mention the mechanism of formation and types of coral reef with significance. 1+3+4+2=10

(f) Describe the life cycle and pathogenicity of *Wuchereria bancrofti* with schematic representation. 6+4=10

(g) What are the important characters of class Cestoda? Write in brief the symptoms, treatment and prevention of *Taeniosis*. 4+2+2+2=10

(h) Write *six* distinctive characters of Porifera. Classify the phylum Porifera mentioning *three* characters of each class with example. 3+7=10

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3 (Sem–1/CBCS) ZOO HC 2

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 : ***(any seven)*** 1×7=7

   (a) An 'ecotone' is _____.

   (i) transition area

   (ii) site of interaction of two different biological communities

   (iii) shared boundary of two or more ecosystems

   (iv) All of the above

(b) A set of ecosystems is referred to as

(i) biome

(ii) hydrosphere

(iii) community

(iv) cline

(c) Which of the following is NOT a feature of *r*-selected species ?

(i) Quick reproduction

(ii) Low survival rate of progenies

(iii) Large litter size

(iv) Paternal care

(d) The final stable community in ecological succession is

(i) climax

(ii) sere

(iii) pioneers

(iv) carnivores

(e) Which of the following is NOT a gaseous biogeochemical cycle in ecosystems ?

(i) Carbon

(ii) Nitrogen

(iii) Sulphur

(iv) Phosphorous

(f) The pyramid of biomass is inverted in

(i) forest ecosystem

(ii) grassland ecosystem

(iii) tundra

(iv) freshwater ecosystem

(g) The concept of ecological pyramid was first proposed by

(i) Odum

(ii) Charles Elton

(iii) A. G. Tansley

(iv) Ernst Haeckel

(h) _____ is the ratio of energy flow at different points of a food chain.

(i) Carrying capacity

(ii) Ecological efficiency

(iii) Birth rate

(iv) Food web

(i) Energy flow in an ecosystem is

(i) always bidirectional

(ii) never unidirectional

(iii) non-directional

(iv) always unidirectional

(j) Identify the correct statement.

(i) Every component of food chain forms trophic level.

(ii) Food web is an interrelation between different food chains.

(iii) Food chains are used to understand energy flow.

(iv) All of the above

(k) Which of the following defines the study of the characteristics and parameters of a population ?

(i) Demography

(ii) Mortality

(iii) Natality

(iv) Population density

(l) Which of the following structures is observed in a diminishing population ?

(i) Upright

(ii) Histogram

(iii) Bell-shaped

(iv) Urn-shapped

2. Write briefly on : **(any four)** 2×4=8

(a) *r*-selection

(b) Natality

(c) Synecology

(d) Limiting factors

(e) Ecological efficiency

(f) Gause's competitive exclusion

(g) Species dominance

(h) Edge effect

3. Write short notes on : **(any three)** 5×3=15

(a) Climax community

(b) Energy flow in ecosystem

(c) Life tables and survivorship curves

(d) Food web

(e) Nitrogen cycle

(f) In-situ wildlife conservation

Contd.

(g) Exponential population growth

(h) Carrying capacity

4. Answer elaborately : ***(any three)*** 10×3=30

(a) What do you understand by population density ? Explain with an example. Add a note on fecundity tables highlighting the importance in population ecology.

(b) Discuss with examples the characteristics of a community.

(c) Compare and contrast between grazing and detritus food chains. Discuss with an example on *Y*-shaped food chain.

(d) Discuss the Lotka-Volterra equation for competition and predation. Highlight the characteristics of *K*-selection strategy.

(e) Describe the concept of ecological succession with a suitable example.

(f) What is ex-situ conservation ? Write briefly the management practices for wildlife conservation.

(g) Discuss the density-independent factors of population regulation.

(h) What do you understand by a limiting factor ? Explain the laws of limiting factors. Add a note on Shelford's law of tolerance citing suitable examples.

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