7/12/2018

This question paper contains 3 printed pages.

Your Roll No. .....

Sl. No. of Ques. Paper : **123** **I**

Unique Paper Code : **32231101**

Name of Paper : **Non-chordates I : Protists to Pseudocoelomates**

Name of Course : **B.Sc. (Hons.) Zoology**

Semester : **I**

Duration : **3 hours**

Maximum Marks : **75**

(Write your Roll No. on the top immediately on receipt of this question paper.)

*Attempt **five** questions in all. Question No. 1 is compulsory. Please attempt various parts of a question at one place only. Draw well labelled diagrams wherever necessary.*

1. (a) Define any *five* of the following terms:

   (i) Digenetic

   (ii) Conjugation

   (iii) Corallite

   (iv) Encystment

   (v) Trichocyst

   (vi) Pseudocoelom. 5

   (b) Distinguish between any *four* of the following:

   (i) Polyp and Medusa

   (ii) Axopodia and Filopodia

   (iii) Ostia and Osculum

P. T. O.

(iv) Thesocytes and Myocytes

(v) Silicoblast and Calcoblast. 8

(c) Give the generic names of any *three* of the following and classify up to classes:

(i) Mushroom coral

(ii) Venus' flower basket

(iii) Liver fluke

(iv) Jelly Fish. 6

(d) State the phylum in which it is found and functions of any *four* of the following:

(i) Flame cell

(ii) Contractile vacuole

(iii) Spongin fibres

(iv) Amphids

(v) Pyrenoids. 8

2. Give an account of sexual reproduction in protists. Discuss its importance. 12

3. (a) Describe the evolutionary significance of Ctenophora. 6

(b) Define polymorphism with suitable examples and its significance. 6

4. (a) Describe the leuconoid type of canal system in Porifera with well labelled diagram. 6

(b) Describe the general characteristics of phylum Cnidaria and classify up to classes with examples. 6

5. Give an account of the life history of *Fasciola hepatica*. Add a note on its pathogenicity. 12

6. Describe the reproduction and life cycle of *Wuchereria bancrofti* **or** *Ascaris lumbricoides*. Write a note on the diseases caused by this parasite. 12

7. Write a short notes on any ***three*** of the following:

(a) Pathogenicity of *E. histolytica*

(b) Coral Reefs

(c) Metagenesis in *Obelia*

(d) Parasitic adaptations in Platyhelminthes

(e) Locomotion in *Paramecium*. 4×3=12

This question paper contains 4 printed pages.

Your Roll No. .....2018.....

Sl. No. of Ques. Paper : **124** **I**

Unique Paper Code : **32231102**

Name of Paper : **Perspectives in Ecology**

Name of Course : **B.Sc. (Hons.) Zoology**

Semester : **I**

Duration : **3 hours**

Maximum Marks : **75**

(Write your Roll No. on the top immediately on receipt of this question paper.)

Attempt five questions in all.
Question No. 1 is compulsory.

1. (a) Define the following:

   (i) Life table

   (ii) Fecundity

   (iii) Oligotrophic lake

   (iv) Species divesity. 4

   (b) Distinguish between the following:

   (i) Autogenic and Allogenic succession

   (ii) Unitary and Modular population

   (iii) Grazing and Detritus food chain

   (iv) Neritic and Benthic zone. 6

(c) State whether true or false. Also correct the false statements:

(i) Flow of energy in an ecosystem is bidirectional.

(ii) Type I functional response of predator can stabilize prey population density.

(iii) The upper asymptote is also known as the carrying capacity of a population in a sigmoid growth curve.

(iv) Competition, parasitism and predation are examples of density-independent factors of population regulation. 4

(d) Match the following: 5

1. Competitive exclusion principle	(a) Ernst Haeckel
2. Law of minimum	(b) Charles Darwin
3. Ecology	(c) A.G. Tansley
4. Ecological pyramid	(d) Justus von Liebig
5. Polyclimax theory	(e) Charles Elton
	(f) Georgy Gause

(e) Fill in the blanks:

(i) ..... is also known as the tension zone or the zone of stress.

(ii) The area actually inhabited by the tigers in whole of Jim Corbett National Park would be termed as its ..... density.

(iii) Permanently frozen deeper soil in tundra is called as .....

(iv) Assimilation efficiency in carnivores is ..... than in herbivores. 4

(f) Illustrate the following with the help of diagrams (no description required):

(i) Universal energy flow model

(ii) Dispersion patterns. 4

2. (a) Explain the exponential and logistic growth forms of population with the help of suitable diagrams and equations.

(b) Write a note on density dependent factors with suitable examples. 7,5

3. (a) Define biogeochemical cycle. Explain nitrogen cycle emphasizing on the role of microorganisms in it.

(b) Explain Shelford's law of tolerance with suitable examples. 7,5

4. (a) Define ecological succession. Explain the various theories of climax in succession.

(b) Differentiate between ecosystem and biome. Explain the components of an ecosystem with any one ecosystem as an example. 5,7

5. (a) Describe Lotka-Volterra model for predation with the help of diagrams and equations.

   (b) Differentiate between r- and k-selected species. 8,4

6. Write short notes on any *three* of the following:

   (a) Vertical stratification in a temperate lake

   (b) Edge effect

   (c) Temperature as a limiting factor

   (d) Lindeman's efficiency

   (e) Population interactions. 4,4,4

Sl-No-DJ Q.P : 1681

2018

Unique Paper Code: 223101

Name of the Paper: ZOHT101: Biodiversity-I Non-Chordata

Name of the Course: B.Sc. (H) Zoology

Semester: I

Duration: 3 hours

Maximum Marks: 75 Marks

Instruction for Candidates

Attempt any five Questions including **Question No. 1** which is compulsory.

Note: Please attempt various parts of a question at one place only.

Draw well-labelled diagrams wherever necessary.

Q 1 (a) Explain the following terms (Any three):

(i) Liver-rot
(ii) Polyembryony
(iii) Bilateral symmetry
(iv) Protandry (3)

(b) Differentiate between the following pairs of terms (Any four):

(i) Acoelomates and Pseudocoelomates
(ii) Nematocyst and Trichocyst
(iii) True metamerism and Pseudometamerism
(iv) Cilia and Flagella
(v) Atoke and Epitoke (8)

(c) Give one function for each of the following:

(i) Ink Gland
(ii) Green gland
(iii) Pedicellaria
(iv) Amphid
(v) Ctenidia
(vi) Choanocytes (6)

(d) Give generic names and classify the following up to order. Write the identifying features of phylum and class in each case:

(i) Paddle worm
(ii) Devil fish
(iii) Centipede
(iv) Sea urchin
(v) Organ pipe coral (10)

Q2. (a) Explain the structure of compound eye in arthropods. (5)
(b) With the help of suitable diagrams explain the working of compound eyes. (7)

Q3. Describe the various modes of locomotion in Protista. (12)

Q4. (a) With the help of neat labelled diagrams explain the life cycle of *Ascaris lumbricoides* (7)

(b) Discuss the parasitic adaptations in nematodes. (5)

Q5. (a) Give a brief illustrated account of the water-vascular system in star fish. Add a note on its significance. (7)
(b) Write a note on modification of foot in Mollusca. (5)

Q6. Describe the social life in insects with special reference to honey bees. Add a note on the communication system in social insects. (12)

Q7. (a) What are corals? Describe the different types of coral reefs giving suitable diagrams. (8)

(b) Draw a neat labelled diagram to explain the canal system in *Sycon*. (4)

Q8. Write short notes on **any three**:

(a) Larval forms of *Fasciola*
(b) Polymorphism in Cnidaria
(c) Parasitic adaptations in Helminthes
(d) Torsion in Gastropods
(e) Binary fission in Protista (4,4,4)