

1st Semester Examination, 2020

Time : 3 hours

Full Marks : 60

Answer any **one** Group as per your Syllabus.

Answer from all the sections as per direction.

The figures in the right-hand margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

GROUP—A
(MODEL SYLLABUS)
(PROTISTA TO PSEUDOCOELOMATES)

PART—I

1. Fill in the blanks with appropriate answer : 1 × 8
- (i) —— cells maintain water current in sponges.
 - (ii) Alternation of generation in obelia is called ——.
 - (iii) The exoskeleton of coral colony is ——.
 - (iv) In Fasciola the germ cells of Radia larvae give rise to ——.
 - (v) The body segments of Taenia are called ——.
 - (vi) —— is the infective stage of Wuchereria.
 - (vii) Sporogony of plasmodium takes place in ——.
 - (viii) Entamoeba *histolytica* is the causative agent of —— diseases.

PART—II

2. Answer any *eight* of the following in two or three sentences : 1.5 × 8
- (i) Why Amoeba is immortal ?

- (ii) What is gamogony in *plasmodium vivax* ?
- (iii) What is Binary fission ?
- (iv) What is a medusa ?
- (v) What are coral reefs ?
- (vi) What are comb plates ?
- (vii) Why liver fluke is a digenetic parasite ?
- (viii) Why measly Pork should not be consumed ?
- (ix) Why the living *Ascaris* is not digested in human intestine ?
- (x) What is elephantiasis ?

PART–III

3. Answer any *eight* of the following questions within 75 words : 2 × 8

- (i) Write short notes on spicules of sponges.
- (ii) What are porocytes ? Write about their functions.
- (iii) Write short note on *entamoeba histolytica*.
- (iv) Write short note on cnidoblast.
- (v) What do you mean by metagenesis ?
- (vi) Differentiate between cercaria and metacercaria larvae.
- (vii) Differentiate between oncospheres and hexacanth.
- (viii) How does the *Taenia* adult survive the osmotic stress and pH of host body.
- (ix) Differentiate between male and female *Ascaris*.
- (x) Write short note on *Microfilaria*.

PART–IV

Answer the following questions within 500 words with suitable diagrams if necessary.

6 × 4

4. Write a note on reproduction in *Amoeba*.

Or

Give an account of the life history of *plasmodium vivax* in human host.

5. What do you mean by metagenesis ? Explain it with suitable examples.

Or

Mention the general characters of ctenophora. How they are related to coelenterata ?

6. Give an account of pathogenicity of *Fasciola hepatica*.

Or

Describe the parasitic mode of life of *Taenia solium*.

7. Give an account of parasitic adaptations in helminthes.

Or

Describe the life cycle of *Ascaris lumbricoides*.

GROUP—B
(OLD SYLLABUS)
(BIOLOGY OF NON-CHORDATA-I-PROTIST TO PSEUDOCOELOMATES)

SECTION—A

1. Answer *all* questions : 2 × 6

- (i) What are protonephridia ?
- (ii) What are lasso cells ?
- (iii) What is multiple fission ?
- (iv) Define metagenesis.
- (v) Name the larval stages of *Fasciola hepatica*

SECTION—B

Answer *all* questions :

2. (a) Discuss conjugation in *Paramecium*. 12

Or

(b) Describe origin of Metazoa. 12

3. (a) Discuss the canal system in sponges. 12

Or

(b) Write short notes on : 6 × 2

(i) Affinities of *Ctenophora*

(ii) Syconoid canal system

4. (a) Discuss metagenesis in *Obelia*. 12

Or

(b) Write short notes on : 6 × 2

(i) Fringing reefs

(ii) Atolls

5. (a) Give an account of parasitic adaptation in Helminthes. 12

Or

(b) Write short notes on : 6 × 2

(i) Miracidium larva

(ii) Cercaria larva

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GROUP—A
(MODEL SYLLABUS)
(PRINCIPLES OF ECOLOGY)

PART—I

Answer the following questions with one word or fill in the blanks
with most appropriate answer.

1 × 8

1. (i) What is the assemblage of population of living organisms inhabiting a particular habitat called.
- (ii) Animal that can tolerate a narrow range of temperature are called ——.
- (iii) Write one density dependent limiting factor.
- (iv) Which type of population exhibit a bell shaped age pyramid.
- (v) Write the name of a denitrifying bacteria.
- (vi) Which type of survivorship curve is shown by Oysters ?
- (vii) The full form of IUCN is ——.
- (viii) Square root of variance is called ——.

PART—II

Answer any *eight* of the following questions within one to two sentences each :

1.5 × 8

2. (i) What is an ecological pyramid ?

- (ii) What is an Y-shaped food chain ?
- (iii) What is hibernation in animals ?
- (iv) What is natality and how is it mathematically represented ?
- (v) What is Gause's principle ?
- (vi) What do you mean by species richness ?
- (vii) What is edge effect ?
- (viii) What do you mean by climax community ?
- (ix) What are different measures of dispersion ?
- (x) What is chi-square test.

PART–III

Answer any *eight* of the following questions within 75 words each : 2 × 8

3. (i) Differentiate between detritus and grazing food chain.
- (ii) Write short notes on food web.
 - (iii) What is the combined concept of limiting factors ?
 - (iv) What is Population density and how is it measured ?
 - (v) Define survivorship curve and its categories.
 - (vi) What is species diversity ? What are the factors affecting it ?
 - (vii) What is an ecotone ? What are the causes of its formation ?
 - (viii) Write short notes on polyclimax concept.
 - (ix) Distinguish between null hypothesis and alternate hypothesis.
 - (x) Find out standard deviation of 2, 4, 6, 8, 9.

PART–IV

Answer the following questions within 500 words with
suitable diagrams if necessary. 6 × 4

4. Describe any one energy flow model in an ecosystem.

Or

Discuss different laws of limiting factors.

5. Describe density dependent and density independent factors in population regulation.

Or

What do you mean by population ? Describe any four characteristics of population.

6. What is a community ? Discuss any four characteristics of it.

Or

Discuss different theories pertaining to climax community.

7. Define mean deviation. Describe how it is measured in a frequency distribution data.

Or

Two varieties of hens yield eggs as shown in the table. Does the mean number of egg of variety A significantly differ from that of variety B.

Variety A : 10, 12, 13, 15, 17

Variety B : 15, 17, 25, 28, 30

GROUP—B
(OLD SYLLABUS)
(PRINCIPLES AND ETHICS OF ECOLOGY)

SECTION—A

1. Answer all (Briefly describe the following) : 2 × 6

- (i) Food chain
- (ii) Photoreactivation
- (iii) Mortality
- (iv) Monoclimax theory
- (v) Vant Hoff's rule
- (vi) Autecology

SECTION-B

Answer all questions :

12 × 4

2. Describe the effect of light on animals.

12

Or

Write short notes on :

6 × 2

(i) Leibig's law of minimum

(ii) Shelford law of tolerance

3. Discuss the exponential and logistic growth of the population.

12

Or

Write short notes on :

6 × 2

(i) Commensalism

(ii) Parasitism

4. Give an account of ecological succession.

12

Or

Write short notes on :

6 × 2

(i) Species stratification

(ii) Edge effect

5. Discuss the ecological efficiencies during energy flow in the ecosystem.

12

Or

Write short notes on :

6 × 2

(i) Phosphorous cycle

(ii) Pyramid of biomass

1st Semester Examination, 2020*Time : 3 hours**Full Marks : 60*Answer any **one** Group as per your syllabusAnswer from **all** the Sections as per direction*The figures in the right-hand margin indicate marks**Candidates are required to answer in their own words as far as practicable*

GROUP—A

(MODEL SYLLABUS)**(ANIMAL DIVERSITY)**

SECTION—A

1. Answer the following questions in *one* word only : 1 × 8

- (i) Infective stage of *plasmodium vivax* is _____ .
- (ii) The Jelly like non-cellular layer in between ectoderm and endoderm of cnidarians is _____ .
- (iii) Sterile females in honey bee colony are _____ .
- (iv) Mentle membrane is found in organisms of phylum _____ .
- (v) In_____ type of migration, fishes migrate from sea to river for breeding.
- (vi) Parental care by Coiling around the eggs is found in _____ of class amphibia.
- (vii) Diastema is found in _____ mammals.
- (viii) Earliest known fossil bird is _____ .

SECTION—B

2. Answer any *eight* of the following questions within *one* or *two* sentences each :

- (i) What is ookinite ? $1\frac{1}{2} \times 8$
- (ii) What is a flame cell ?
- (iii) What is a onchosphere ?
- (iv) What do you mean by metamerism ?

(Turn Over)

- (v) How drones are produced by queen honey bee ?
- (vi) What is a pearl and where its formation takes place ?
- (vii) What do you mean by osmoragulation ?
- (viii) How protochordates are chordates but acraniates ?
- (ix) Write two terrestrial adaptive features in reptiles.
- (x) What is dental formula ?

SECTION— C

3. Answer any *eight* of the following within 75 words each : 2 × 8
- (i) Write short notes on Syconoid type canal system.
 - (ii) Write short notes on gastrovascular cavity.
 - (iii) What are different methods of reproductions in protozoa ?
 - (iv) Write short notes on torsion in gastropoda.
 - (v) What is Bipinnaria larva ?
 - (vi) What are different types of respiration found in amphibians.
 - (vii) What do you mean by cephalo chordata ?
 - (viii) What are amniotes ? Give four examples of them.
 - (ix) Write short notes on Seymouria.
 - (x) Write short notes on Prototheria.

SECTION— D

Answer **all** questions of the following
within **500** words each :

6 × 4

4. Describe life cycle of *Taenia solium*.

Or

Give an account of polymorphism in Cnidarians.

5. Describe torsion in gastropods.

Or

Give an account of larval forms in Echinoderms.

(3)

6. Give an account of salient features of protochordata.

Or

Write a note on adaptation for terrestrial life.

7. Write a note on origin of birds.

Or

Give an account of dentition in mammals.

GROUP – B
(OLD SYLLABUS)
(ANIMAL DIVERSITY)

SECTION – A

1. Answer *all* (Briefly describe the following) : 2 × 6
- (i) Sporozoite
 - (ii) Cnidoblast
 - (iii) Anadromous migration
 - (iv) Metamere
 - (v) Flight muscle
 - (vi) Thecodont.

SECTION – B

Answer **all** questions : 12 × 4

2. Discuss canal system in Porifera.

Or

Give an account of polymorphism in Hydrozoa.

3. Discuss the water vascular system in Starfish.

Or

Give an account of social life in insects.

(4)

4. Describe parental care in Amphibia.

Or

Give an account of migration in fishes.

5. Give an account of flight adaptation in Birds.

Or

Discuss evolution of Primates.

2019

(1st Semester)

Time : $2\frac{1}{2}$ hours

Full Marks : 60

Answer from both the Sections as per direction

The figures in the right-hand margin indicate marks

*Candidates are required to answer in their own words
as far as practicable*

**(BIOLOGY OF NON-CHORDATA-I)
PROTIST TO PSEUDO COELOMATES**

SECTION—A

1. Answer all the questions : 2×6

(i) Sleeping sickness

(ii) Signet ring stage

(iii) Spicules

(iv) Medusa

(Turn Over)

(2)

- (v) Meta cercaria
- (vi) What do you mean by prophylaxis.

SECTION - B

Answer all the questions : 12 x 4

2. (a) Describe the life cycle and patho-genicity of *Entamoeba hystolytica*.

Or

- (b) Write notes on :
 - (i) Reproduction in Porifera
 - (ii) Locomotory organs of porifera.

3. (a) Discuss the canal system in porifera.

Or

- (b) Write notes on :
 - (i) Economic importance of ctenophora
 - (ii) Rhagon type of canal system.

SH ZOO 01

(Continued)

SH ZOO 01

BA - 2,100

(3)

4. (a) Describe the various types of coral reefs and various theories related to its formation.

Or

- (b) Write notes on :
 - (i) Metagenesis in Obelia
 - (ii) Polymorphism in Cnidaria.

5. (a) Discuss the parasitic adaptation in helminthes.

Or

- (b) Write notes on :
 - (i) Structure of *Ascaris*
 - (ii) Miracidium larva

2019

(1st Semester)

Time : $2\frac{1}{2}$ hours

Full Marks : 60

Answer from both the Sections as per direction

The figures in the right-hand margin indicate marks

*Candidates are required to answer in their own words
as far as practicable*

(PRINCIPLES AND ETHICS OF ECOLOGY)

SECTION – A

1. Answer all (Briefly describe the following) : 2 × 6

- (a) Synecology
- (b) Heat Coma
- (c) Allen's Rule
- (d) Keystone species

(Turn Over)

(2)

- (e) Bergmann's Rule
- (f) Gause's Principle.

SECTION - B

Answer all questions : 12 x 4

2. (a) Describe light as an eco-factor. 12

Or

- (b) Write notes on the following : 6 x 2
- (i) Law of limiting factors
 - (ii) History of Ecology

3. (a) What is a population ? Describe the characteristics of population. 12

Or

- (b) Write notes on the following : 6 x 2
- (i) Regulation of population
 - (ii) Population growth.

SH ZOO 02

(Continued)

(3)

4. (a) What is ecological succession ? Discuss hydrosere. 12

Or

- (b) Write notes on the following : 6 x 2

- (i) Ecotone and Edge effect
- (ii) Community characteristics.

5. (a) Biogeochemical cycles are a necessity for any ecosystem. Describe with the help of Nitrogen cycle in an ecosystem. 12

Or

- (b) Write notes on the following : 6 x 2

- (i) Ecological Pyramids
- (ii) Energy flow in ecosystem.

SH ZOO 02

BA-2,100

2019

(1st Semester)

Time : $2\frac{1}{2}$ hours

Full Marks : 60

Answer from **both** the Sections as per direction

The figures in the right-hand margin indicate marks

*Candidates are required to answer in their own words
as far as practicable*

(ANIMAL DIVERSITY)

SECTION—A

1. Answer *all* the following questions : 2 × 6

(i) Anadromous fish

(ii) Metagenesis

(iii) Flagella

(iv) Nuptial flight

(Turn Over)

(2)

- (v) Tube feet
- (vi) Cnidoblast cells.

SECTION—B

Answer all questions : 12 x 4

2. (a) Describe the life cycle of *Plasmodium Vivax* in man with suitable diagram.

Or

(b) What is polymorphism ? Discuss polymorphism found in hydrozoa.

3. (a) What is a Pearl ? Discuss the process of Pearl formation.

Or

(b) Give an account of metamerism in phylum Annelida.

4. (a) Discuss the salient features of protochordates.

SG ZOO 01

(Continued)

SG ZOO 01

BA— 1,300

(3)

Or

(b) Give an account of parental care in Amphibians.

5. (a) Explain the flight adaptation in birds.

Or

(b) Describe the origin of Reptiles.

Total Pages—3

SHZOO 01

2018

(1st Semester)

Time : $2\frac{1}{2}$ hours

Full Marks : 60

Answer from Section—A and Section—B
as per direction

*The figures in the right-hand margin indicate marks
Candidates are required to answer in their own words
as far as practicable*

(BIOLOGY OF NON-CHORDATA - I)

(Protista to Psedocoelomates)

SECTION —A

1. Answer the following questions : 2 × 6
- (i) What is the meaning of pathogenicity ?
 - (ii) How many classes are there under the phylum Porifera and what are these ?

(Turn Over)

(2)

- (iii) What does metagenesis mean ?
- (iv) What is the literal meaning of Ctenophora ?
- (v) What does platyhelminthes mean ?
- (vi) What is parasitism ?

SECTION - B

Answer all the questions : 12 x 4

- 2. Explain the life cycle of *Plasmodium*.

Or

Write notes on :

- (i) Signet ring and
- (ii) Reproduction in Protozoa.

- 3. Classify Porifera with example from each class.

Or

Write notes on :

- (i) Canal system and
- (ii) Ctenophora.

(3)

- 4. Define and discuss polymorphism with its significance.

Or

Write notes on :

- (i) Coral and
- (ii) Anthozoa.

- 5. Give an account of the life cycle of liver fluke.

Or

Write notes on :

- (i) Cercaria and
- (ii) Structure of male and female *Ascaris*.

Total Pages—3

SHZOO 02

2018

(1st Semester)

Time : $2\frac{1}{2}$ hours

Full Marks : 60

Answer from both the Sections as per direction

The figures in the right-hand margin indicate marks

*Candidates are required to answer in their own words
as far as practicable*

**(PRINCIPLES AND ETHICS
OF ECOLOGY)**

SECTION - A

1. Define the following :

2 × 6

(a) Level of organization

(b) Sex ratio

(Turn Over)

(2)

- (c) 'K' strategies
- (d) Ecology succession
- (e) Y-shaped food chain
- (f) Food web.

SECTION - B

Answer all questions : 12 x 4

2. Write an essay on levels of organization of an ecosystem.

Or

Describe the role of light in adaptation of living organism.

3. Discuss different aspects of survivorship curves, age ratio and sex ratio in a population.

Or

Give an account of Gause's principles with suitable laboratory and field examples.

(3)

4. Discuss the role of species richness in formation of biotic community.

Or

Describe different aspects of theories pertaining to climax community formation in ecology succession.

5. Give an account of different aspects of energy flow in an ecosystem.

Or

Describe ecological pyramid and ecological efficiencies with suitable examples.

2017

BIOLOGY OF NON CHORDATA - I
(Protista to Pseudocoelomates)

Time : 2½ Hours] [Full Marks : 60

Answer from both the Sections as directed. The figures in the right-hand margin indicate marks.

SECTION-A

1. Answer all questions : 2×6
- (a) How many species of *Plasmodium* are there ?
 - (b) What is the meaning of Ctenophora ?
 - (c) What are the different classes of Cnidaria ?
 - (d) What is the definition of parasite ?
 - (e) What is the common name of *Ascaris* ?
 - (f) What is metagenesis ?

SECTION-B

- Answer all questions : 12×4
2. Give an account of reproduction in protozoa.

OR

(2)

Write notes on the following :

- (a) Asexual cycle of *Plasmodium*
 - (b) *Entamoeba histolytica*
3. Explain canal system in sponges.

OR

Write notes on the following :

- (a) Characteristics of ctenophora
 - (b) Calcarea
4. Describe coral reefs with their significance.

OR

Write notes on the following :

- (a) Metagenesis
 - (b) Polymorphism
5. Give an explanation on the life cycle of *Ascaris*.

OR

Write notes on the following :

- (a) Redia
- (b) General characteristics of Platyhelminthes

2017

PRINCIPLES AND ETHICS OF ECOLOGY

Time : 2½ Hours] [Full Marks : 60

Answer from both the Sections as directed. The figures in the right-hand margin indicate marks.

SECTION-A

1. Give comments on the following : 2×6
- (a) Autecology and Synecology
 - (b) Survivorship Curve
 - (c) Gause's Principle
 - (d) Ecotone
 - (e) Food chain
 - (f) Biogeochemical cycle

SECTION-B

Answer all questions : 12×4

2. Give an account of relevance of study in ecology.

OR

Discuss the role of temperature and light in ecological adaptation of living organisms.

(2)

3. Discuss laws of limiting factors in an ecological system.

OR

Describe exponential and logistic growth in population ecology.

4. Give an account of characteristic features of community and its species richness.

OR

Discuss the mechanism of ecological succession.

5. Describe food chains observed in different ecosystem.

OR

Give an account of phosphorous and sulphur cycle in ecosystem.

(5) FBS-IS-Zool. (GE-1)

2017

ANIMAL DIVERSITY

Time : 2½ Hours]

[Full Marks : 60

Answer from both the Sections as directed. The figures in the right-hand margin indicate marks.

SECTION-A

1. Comment on the following terms : 2×6
- (a) Ookinete stage
 - (b) Metameres
 - (c) Sponging type mouthparts
 - (d) Madreporite in starfish
 - (e) Vertical migration in birds
 - (f) Neoteny

SECTION-B

Answer all questions :

12×4

2. Give an account of polymorphism in hydrozoa.

OR

6_BAM_88 (2)

(Turn Over)

(1-3) (2) (2)

Discuss parasitic adaptation in tapeworm.

3. Describe general characters and metamerism in Annelida.

OR

What is Pearl? Write a note on pearl formation.

4. Describe the salient features and affinities of protochordates.

OR

What is Osmoregulation? Give an account of Osmoregulation in fishes.

5. Write an essay on origin of reptiles.

OR

Describe, in detail, flight adaptation in birds.