



WEST BENGAL STATE UNIVERSITY
B.Sc. Major 1st Semester Examination, 2023-24

ZOODSC101T-ZOOLOGY (MAJOR)

Time Allotted: 2 Hours

Full Marks: 50

*The figures in the margin indicate full marks.
Candidates should answer in their own words and adhere to the word limit as practicable.
All symbols are of usual significance.*

1. Answer any **nine** questions from the following: 2×9 = 18
- (a) What is contractile vacuole? State its function.
 - (b) What do you mean by metachronal wave of the Cilia?
 - (c) State the functions of gonozoid.
 - (d) What do you mean by plasmotomy? Where is it found?
 - (e) What is zooxanthellae?
 - (f) Distinguish between pinacoderm and choanoderm.
 - (g) Write down the pathogenicity of *Ascaris* sp.
 - (h) What is zoonosis?
 - (i) Differentiate between polyp and medusa.
 - (j) Why ctenophores are called Comb jelly?
 - (k) Distinguish between apopyl and prosopyl.
 - (l) What is colloblast cell?
2. Answer any **four** questions from the following: 3×4 = 12
- (a) Summarise the importance of conjugation in *Paramecium* sp.
 - (b) Compare between Asconoid and Syconoid canal system in Sponges.
 - (c) What are the factors responsible for the formation of coral reef?
 - (d) Mention adaptive features of *Fasciola hepatica*.
 - (e) What is polymorphism? Why does polymorphism considered to be an advanced feature in Cnidarians?
 - (f) State the development of *Taenia* sp. in intermediate host.
 - (g) Mention three unique features of phylum Ctenophora.



NEP/B.Sc./Major/1st Sem./ZOODSC101T/2023-24

3. Answer any **four** from the following:

5×4 = 20

(a) Name the phylum and class of the following animals:

$(\frac{1}{2} + \frac{1}{2}) \times 5$

(i) Sea Pen —

(ii) Sea Anemone —

(iii) *Taenia* sp. —

(iv) *Spongilla* sp. —

(v) *Euglena* sp. —

(b) To which phylum does the following structures belong and mention one function of each. $(\frac{1}{2} + \frac{1}{2}) \times 5$

(i) Renette Cell —

(ii) Monoaxon Spicule —

(iii) Nematocyst —

(iv) Comb plate —

(v) Pseudopodia. —

3+2

(c) State the structural differences between the promastigote and mastigote stages of *Leishmania donovani* with suitable diagram. Write a note on the pathogenicity of *L. donovani*.

2+3

(d) Define definitive host and intermediate host. Elaborate significance of definitive and intermediate host in *Wuchereria bancrofti* infection with example.

3+2

(e) Briefly describe ultrastructure of flagellum with suitable diagram.

4+1

(f) "The term metagenesis is more suitable than alternation of generation in case of Cnidarians". — Explain. What is velum?

$2\frac{1}{2} \times 2 = 5$

(g) Write short notes on the following:

(i) Life cycle of *Ascaris lumbricoides*

(ii) Erythrocytic schizogony of *Plasmodium vivax*.



WEST BENGAL STATE UNIVERSITY
B.Sc. Honours 1st Semester Examination, 2022-23

ZOOACOR01T-ZOOLOGY (CC1)

Time Allotted: 2 Hours

Full Marks: 40

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Candidates should answer in their own words and adhere to the word limit as practicable.

GROUP-A

1. Answer any *eight* questions from the following: 2×8 = 16
- (a) What is rostellum? 1+1
 - (b) What are amphids and phasmids?
 - (c) What is Giardiasis?
 - (d) Differentiate between cytostome and cytopygæ.
 - (e) State two significance of micronucleus during conjugation in *Paramoecium* sp.
 - (f) Mention the symptoms of elephantiasis.
 - (g) Compare between endomixis and parthenogenesis in Protozoa.
 - (h) What is Coralite?
 - (i) Write down two characteristic features of class Anthozoa.
 - (j) What is a vector? Write the scientific name of the vector of Kala-azar. 1+1
 - (k) State the scientific name of a fresh water sponge. In which class does it belong? 1+1

GROUP-B

2. Answer any *three* questions from the following: 3×3 = 9
- (a) Briefly describe the role of microfilaments in amoeboid movement.
 - (b) What are the different factors responsible for the formation of coral reef?
 - (c) Write down the pathogenicity of *Plasmodium vivax*.
 - (d) Enumerate the parasitic adaptations of *Ascaris lumbricoides*.
 - (e) Write a short note on Cercaria larva.

GROUP-C

3. Answer any *three* questions from the following: 5×3 = 15
- (a) Classify phylum Porifera up to classes with suitable example.



CBCS/B.Sc./Hons./1st Sem./ZOOACOR01T/2022-23

(b) Name the phylum and class of the following animals:

- (i) Glass rope sponge
- (ii) Sea fan
- (iii) *Taenia* sp
- (iv) Venus Flower Basket
- (v) Horn Coral.

(c) To which phylum does the following structures belong and mention one $(\frac{1}{2} + \frac{1}{2}) \times 5 = 5$ function of each:

- (i) Scolex
- (ii) Gastrovascular cavity
- (iii) Penial Setae
- (iv) Rhabdites
- (v) Porocytes.

(d) Explain the life cycle of *Leishmania donovani* with the help of a labelled diagram. 3+2

(e) Write short notes on:

- (i) Fringing Reef
- (ii) Salient features of Rotifera.

$2\frac{1}{2} \times 2 = 5$

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WEST BENGAL STATE UNIVERSITY
B.Sc. Honours 1st Semester Examination, 2022-23

ZOOACOR02T-ZOOLOGY (CC2)

Time Allotted: 2 Hours

Full Marks: 40

*The figures in the margin indicate full marks:
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1. Answer any **eight** questions from the following: 2×8 = 16
- (a) Define net reproductive rate.
 - (b) Distinguish between density dependent and density independent factors in population regulation.
 - (c) Elaborate the terms CITES and IUCN.
 - (d) Why Sunderbans are considered to be a biosphere reserve?
 - (e) What is autecology? How it differs from synecology?
 - (f) What is umbrella species?
 - (g) What do you mean by ecological efficiency?
 - (h) What do you mean by edge effect?
 - (i) What is ecesis?
 - (j) What do you mean by vertical stratification?
 - (k) What is carrying capacity?
 - (l) What is biotic potential?
2. Answer any **three** questions from the following: 3×3 = 9
- (a) Name the types of conservations found in the following:
 - (i) Hot Spot (ii) Sperm bank (iii) Zoo
 - (b) What do you mean by hydrosere and xerosere? Differentiate between primary and secondary succession. 1+2
 - (c) State the difference between S-shaped and J-shaped growth curves. What do you mean by K-selected population? 2+1
 - (d) Explain the process of autogenic succession with suitable example. 3
 - (e) Why do food chains in real ecosystems hardly include more than four trophic levels? 3
 - (f) What do you mean by species dominance and species abundance? 3



3. Answer any **three** questions from the following: 5×3 = 15
- (a) Explain the mechanism of transfer of energy through grazing food chain with the help of “box and pipe” model. 5
- (b) Distinguish between in-situ and ex-situ mode of conservation. Write the scientific names of a mammal and a bird that are listed in Schedule I. 3+2
- ✓(c) What is Life table? State its significance. 3+2
- ✓(d) What do you mean by ecological pyramid? Write the significance of these Pyramids. What is an inverted Pyramid? 2+2+1
- ✓(e) Discuss Gause’s Principle with suitable example. 3+2
- (f) Discuss three major types of Age Pyramid with examples. 5

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WEST BENGAL STATE UNIVERSITY
B.Sc. Honours 1st Semester Examination, 2021-22

ZOOACOR01T-ZOOLOGY (CC1)

Time Allotted: 2 Hours

Full Marks: 40

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1. Answer any **eight** questions from the following: 2×8 = 16
 - (a) Enumerate two characteristic features of phylum Sarcomastigophora.
 - (b) Differentiate between cytostome and cytopyege.
 - (c) What is exflagellation?
 - (d) What is the role of choanocytes in the canal system of Porifera?
 - (e) Define polymorphism and state its advantage.
 - (f) Write two distinguishing characters of class hydrozoa.
 - (g) Write the scientific names of a free living and a parasitic Platyhelminthes.
 - (h) Distinguish between a polyp and a medusa.
 - (i) What is comb plate?
 - (j) State how would you distinguish between a male and a female *Ascaris lumbricoides*.
 - (k) Why is light a major limiting factor for the distribution of coral reef?
 - (l) What is tegument and write its function.

2. Answer any **three** questions from the following: 3×3 = 9
 - (a) Enumerate the pathogenicity of *Entamoeba histolytica*.
 - (b) How do symbiotic algae enhance the formation of coral skeleton?
 - (c) Compare between Asconoid and Syconoid canal system in sponges.
 - (d) Write three important physiological modifications for parasitic life of *Fasciola hepatica*.
 - (e) Write short notes on modification of medusae in Cnidarians.

3. Answer any **three** questions from the following: 5×3 = 15
 - (a) Name the phylum and class of the following animals: 5
 - (i) *Euplectella* sp.
 - (ii) *Echinococcus* sp.
 - (iii) Sea pen
 - (iv) *Trypanosoma* sp.
 - (v) *Balantidium* sp.



- (b) To which phylum does the following structure belong and mention one function of each.
- (i) Nematocyst
 - (ii) Renette cell
 - (iii) Monaxon spicule
 - (iv) Acetabulum
 - (v) Coloblast
- (c) Write short notes on any *two* of the following: 2 $\frac{1}{2}$ \times 2 = 5
- (i) Contractile vacuole of *Paramecium* sp.
 - (ii) Hexacanth larva and bladder worm stage of *Taenia solium*
 - (iii) Spicules in sponges.
- (d) What is signet ring stage and erythrocytic schizogony in *Plasmodium vivax*? Define the term ookinete. 2+2+1 = 5
- (e) Explain the life cycle of *Entamoeba histolytica* supported by a flowchart. 5

N.B. : Students have to complete submission of their Answer Scripts through E-mail / Whatsapp to their own respective colleges on the same day / date of examination within 1 hour after end of exam. University / College authorities will not be held responsible for wrong submission (at in proper address). Students are strongly advised not to submit multiple copies of the same answer script.

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WEST BENGAL STATE UNIVERSITY
B.Sc. Honours 1st Semester Examination, 2021-22

ZOOACOR02T-ZOOLOGY (CC2)

Time Allotted: 2 Hours

Full Marks: 40

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1. Answer any **eight** questions from the following: 2×8 = 16
- What is 10% law?
 - What is ecological organization?
 - What do you understand by 'Flagship species'? Give one example of it.
 - What is asymptote?
 - What is allogenic succession?
 - State Liebig's law of minimum.
 - State the key fauna and key flora of Sundarban Biosphere Reserve.
 - Why an aquarium is not considered as ecosystem?
 - What do you mean by climax community?
 - Distinguish between food chain and food web.
 - What is fecundity?
 - What is hydrosere?
2. Answer any **three** questions from the following: 3×3 = 9
- What is growth curve? Explain the sigmoid growth curve. 1+2
 - Explain horizontal stratification of community. 3
 - Distinguish between static and cohort life table. What is life expectancy? 2+1
 - Define detritus food chain with example. State characteristics of it. 1½ + 1½
 - What is ecotone? State its characteristics. 1+2
 - Differentiate between wildlife sanctuary and national park. 3
3. Answer any **three** questions from the following: 5×3 = 15
- What is survivorship curve? Discuss different types of survivorship curves with examples. 1+4
 - Write suitable index used to measure species diversity and state its significance. 1+2+2
Explain *in situ* and *ex situ* modes of conservation.



- (c) Define biosphere. What are biosphere resources?
- (d) State the salient features of Wildlife Protection Act, 1972.
- (e) What are double packed pyramids? Describe the pyramid of biomass.
- (f) What is energy flow in ecosystem? Describe Y-shaped energy flow model.

2+3

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WEST BENGAL STATE UNIVERSITY
B.Sc. Honours 1st Semester Examination, 2020, held in 2021

ZOOACOR01T-ZOOLOGY (CC1)

NON-CHORDATES I

Time Allotted: 2 Hours

Full Marks: 40

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1. Answer any **eight** questions from the following: 2×8 = 16
- (a) Define spicule.
 - (b) Name various larval stages of *Fasciola hepatica*.
 - (c) State functions of gonozooids.
 - (d) Define signet-ring stage.
 - (e) What is the infective stage of *Entamoeba histolytica*?
 - (f) State two characteristic features of Nematelminthes.
 - (g) What is rostellum?
 - (h) Write down the generic name of two freshwater sponges.
 - (i) Give two examples (scientific name) of Platyhelminthes.
 - (j) Name definitive hosts of *Ascaris lumbricoides* and *Taenia solium*.
 - (k) Distinguish between polyp and medusa.
 - (l) Write the functions of macronucleus of *Paramecium* sp.
2. Answer any **three** questions from the following: 3×3 = 9
- (a) State the significance of conjugation in *Paramecium*.
 - (b) Write down the pathogenicity of *Plasmodium vivax*.
 - (c) State characteristic features of phylum Ctenophora.
 - (d) Mention significance of coral reefs.
 - (e) Briefly narrate symptoms and treatment of taeniasis.
3. Answer any **three** questions from the following: 5×3 = 15
- (a) Classify phylum Cnidaria up to classes with proper example. 5
 - (b) Write a short note on Rhagon type of canal system in Sponges with a proper diagram. 2+3



(c) Name the phylum and class of the following animals:

- (i) *Beroe*
- (ii) Liver fluke
- (iii) Sea fan
- (iv) Portuguese Man of War
- (v) *Fungia*.

(d) Write short notes on:

- (i) Atoll
- (ii) Pneumatophore.

$$2\frac{1}{2} \times 2 = 5$$

(e) Describe briefly morphological adaptations found in *Taenia* sp. and *Ascaris* sp.

$$2\frac{1}{2} \times 2 = 5$$

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WEST BENGAL STATE UNIVERSITY
B.Sc. Honours 1st Semester Examination, 2020, held in 2021

ZOOACOR02T-ZOOLOGY (CC2)

Time Allotted: 2 Hours

Full Marks: 40

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1. Answer any **eight** questions from the following: 2×8 = 16
- (a) What is survivorship curve?
 - (b) What do you mean by exponential growth?
 - (c) Compare between habitat and niches.
 - (d) What is carrying capacity?
 - (e) What do you mean by population dispersal?
 - (f) Differentiate between *r* and *k* selection strategies.
 - (g) Explain Gause's competitive exclusion principle.
 - (h) What is ecological efficiency?
 - (i) Name a (0/+) and a (+/+) biotic interactions.
 - (j) What do you mean by reverse ecological pyramids?
 - (k) What is endangered species? Give example from Indian birds.
 - (l) What do you mean by species richness?
2. Answer any **three** questions from the following: 3×3 = 9
- (a) State the monoclimal and polyclimal theory. 3
 - (b) Differentiate between grazing and detritus based food chain. 3
 - (c) Distinguish between Aut-ecology and Syn-ecology. 3
 - (d) Compare between national park, sanctuary and biosphere reserve. 3
 - (e) Define life table. State different parameters of a dynamic life table. 1+2
3. Answer any **three** questions from the following: 5×3 = 15
- (a) Define logistic growth model. Describe different phases of a logistic growth curve with proper diagram. 1+4
 - (b) What are density dependent factors? How do they regulate population? 2+3
 - (c) How many biosphere reserves are found in India? State their names and distribution. Why is Sunderban considered as biosphere reserve? 1+2+2



- (d) Explain the Y-shaped energy flow model with proper diagram.
- (e) What is Eltonian pyramid? Describe the different types of Eltonian pyramid with suitable diagram.
- (f) Write briefly about the “Wildlife Protection Act, 1972”.

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WEST BENGAL STATE UNIVERSITY
B.Sc. Honours 1st Semester Examination, 2019

ZOOACOR01T-ZOOLOGY (CC1)

Time Allotted: 2 Hours

Full Marks: 40

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GROUP-A

1. Answer any **eight** questions from the following: 2×8 = 16
- Differentiate between cytostome and cytopyge.
 - What is Ookinete?
 - Name the different larval stages of *Fasciola* sp.
 - What is dactylozoid?
 - Name one free living and one parasitic Platyhelminthes.
 - Write the scientific name of 'Portuguese Man of War'. Why is it named so? 1+1
 - Mention two differences between Ostium and Osculum.
 - What is coenosarc?
 - State two significances of micro nucleus during conjugation in *Paramecium* sp.
 - How many types of locomotory organs are found in Protozoa? Name them. 1+1
 - Define proglottid.
 - Distinguish between polyp and medusa.
 - What is radial and biradial symmetry?

GROUP-B

2. Answer any **three** questions from the following: 3×3 = 9
- Draw and label the ultrastructure of cilia. 2+1
 - What are bracts? State two significances of polymorphism in Cnidaria. 1+2
 - Write about the periodicity of microfilariae. 3
 - What are the different factors responsible for the formation of coral reefs? 3



- (e) State the significances of process of conjugation in *Paramecium* sp.
 (f) State the salient features of Rotifera.
 (g) What is amoeboid movement? Differentiate between cilia and flagella.

GROUP-C

3. Answer any **three** questions from the following: 5×3 = 15
- (a) Classify Phylum Porifera up to classes with suitable examples. 5
- (b) Name the phylum and class of the following animals: 5
- (i) *Spongilla* sp.
 (ii) Sea-Fan
 (iii) Liver fluke
 (iv) *Physalia* sp.
 (v) *Euplectella* sp.
- (c) To which phylum does the following structures belong and mention one function of each: 5
- (i) Comb plate
 (ii) Corona
 (iii) Contractile vacuole
 (iv) Gastrovascular cavity
 (v) Scolex.
- (d) What is hookworm? Describe the life cycle of *Ascaris lumbricoides* with proper diagram. 1+4
- (e) State the structural differences between the promastigote and amastigote stages of *Leishmania donovani* with a proper diagram. Write the pathogenicity of *Entamoeba histolytica*. 3+2

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WEST BENGAL STATE UNIVERSITY
B.Sc. Honours 1st Semester Examination, 2019

ZOOACOR02T-ZOOLOGY (CC2)

Time Allotted: 2 Hours

Full Marks: 40

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GROUP-A

1. Answer any **eight** questions from the following: 2×8 = 16
- (a) What are ecotype and ecads?
 - (b) What is Homeostasis?
 - (c) What do you mean by Umbrella species?
 - (d) What do you mean by Biological Nitrogen fixation?
 - (e) What are keystone species? Give examples.
 - (f) What are hotspots? How many of them are present in India? Name them.
 - (g) What is pioneer species? Give example.
 - (h) Mention two density dependent factors of population growth.
 - (i) What do you mean by eurythermal animal? Give example.
 - (j) What is fecundity and fertility?
 - (k) What is Autogenic and Allogenic succession?
 - (l) Write the difference between Food chain and Food web.

GROUP-B

2. Answer any **three** questions from the following: 3×3 = 9
- (a) What is closed community? How it differs from open community? 1+2
 - (b) (i) What is zero isocline? 1+2
(ii) What is Lotka-Volterra Competition model?
 - (c) What are the criteria for establishment of Biosphere reserve? Describe the structural components for Biosphere reserve. 1½+1½
 - (d) What are age pyramids? Describe different types of it. 1+2
 - (e) What are the eight red list categories declared by IUCN? Name them with one example each. 3



- (f) Draw the survivorship curves for frogs and human populations.
- (g) State the law of minimum and law of tolerance.

GROUP-C

3. Answer any **three** questions from the following: 5×3 = 15
- (a) What are the different Pyramids that exist in the tropic level? What is an inverted Pyramid? Give example. What is the significance of these Pyramids in ecological tropic levels? 2+2+1
 - (b) Describe the Nitrogen Cycle in brief with proper diagram. $2\frac{1}{2} + 2\frac{1}{2}$
 - (c) Differentiate between ecological niche and habitat. What are the four stages of ecological succession? Cite examples. 2+2+1
 - (d) What are multidimensional or Hypervolume niche? Explain with suitable examples. Explain the concept of resource partitioning and character displacement. 2+3
 - (e) Mention the measures taken by the Sundarban Tiger-Reserve Authorities in the Sundarban Reserve Forest. 5

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WEST BENGAL STATE UNIVERSITY
B.Sc. Honours 1st Semester Examination, 2019

ZOOACOR01T-ZOOLOGY (CC1)

Time Allotted: 2 Hours

Full Marks: 40

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GROUP-A

1. Answer any **eight** questions from the following: 2×8 = 16
- (a) Differentiate between cytostome and cytopharynx.
- (b) What is Ookinete?
- (c) Name the different larval stages of *Fasciola* sp.
- (d) What is dactylozooid?
- (e) Name one free living and one parasitic Platyhelminthes.
- (f) Write the scientific name of 'Portuguese Man of War'. Why is it named so? 1+1
- (g) Mention two differences between Ostium and Osculum.
- (h) What is coenosarc?
- (i) State two significances of micro nucleus during conjugation in *Paramecium* sp.
- (j) How many types of locomotory organs are found in Protozoa? Name them. 1+1
- (k) Define proglottid.
- (l) Distinguish between polyp and medusa.
- (m) What is radial and biradial symmetry?

GROUP-B

2. Answer any **three** questions from the following: 3×3 = 9
- (a) Draw and label the ultrastructure of cilia. 2+1
- (b) What are bracts? State two significances of polymorphism in Cnidaria. 1+2
- (c) Write about the periodicity of microfilariae. 3
- (d) What are the different factors responsible for the formation of coral reefs? 3



- (o) State the significances of process of conjugation in *Paramecium* sp.
(f) State the salient features of Rotifera.
(g) What is amoeboid movement? Differentiate between cilia and flagella.

GROUP-C

- 1 Answer any three questions from the following: 5×3 = 15
- (a) Classify Phylum Porifera up to classes with suitable examples. 5
- (b) Name the phylum and class of the following animals: 5
- (i) *Spongilia* sp.
 - (ii) Sea-Fan
 - (iii) Liver fluke
 - (iv) *Physalia* sp.
 - (v) *Euplectella* sp.
- (c) To which phylum does the following structures belong and mention one function of each: 5
- (i) Comb plate
 - (ii) Corona
 - (iii) Contractile vacuole
 - (iv) Gastrovascular cavity
 - (v) Scolex.
- (d) What is hookworm? Describe the life cycle of *Ascaris lumbricoides* with proper diagram. 1+4
- (e) State the structural differences between the promastigote and amastigote stages of *Leishmania donovani* with a proper diagram. Write the pathogenicity of *Entamoeba histolytica*. 3+2



WEST BENGAL STATE UNIVERSITY
B.Sc. Honours 1st Semester Examination, 2019

ZOOACOR02T-ZOOLOGY (CC2)

Time Allotted: 2 Hours

Full Marks: 40

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All symbols are of usual significance.*

GROUP-A

2×8 = 16

1. Answer any eight questions from the following:

- (a) What are ecotype and ecads?
- (b) What is Homeostasis?
- (c) What do you mean by Umbrella species?
- (d) What do you mean by Biological Nitrogen fixation?
- (e) What are keystone species? Give examples.
- (f) What are hotspots? How many of them are present in India? Name them.
- (g) What is pioneer species? Give example.
- (h) Mention two density dependent factors of population growth.
- (i) What do you mean by eurythermal animal? Give example.
- (j) What is fecundity and fertility?
- (k) What is Autogenic and Allogenic succession?
- (l) Write the difference between Food chain and Food web.

GROUP-B

3×3 = 9

2. Answer any three questions from the following:

- (a) What is closed community? How it differs from open community? 1+2
- (b) (i) What is zero isocline? 1+2
- (ii) What is Louka-Volterra Competition model?
- (c) What are the criteria for establishment of Biosphere reserve? Describe the structural components for Biosphere reserve. 1½ + 1½
- (d) What are size pyramids? Describe different types of it. 1+2
- (e) What are the eight red list categories declared by IUCN? Name them with one example each. 3



- 10) Draw the survivorship curves for frogs and human populations.
- 11) State the law of minimum and law of tolerance.

GROUP-C

3. Answer any *three* questions from the following: 5×3 = 15
- (a) What are the different Pyramids that exist in the tropic level? What is an inverted Pyramid? Give example. What is the significance of these Pyramids in ecological tropic levels? 2+2+1
- (b) Describe the Nitrogen Cycle in brief with proper diagram. $2\frac{1}{2} + 2\frac{1}{2}$
- (c) Differentiate between ecological niche and habitat. What are the four stages of ecological succession? Give examples. 2+2+1
- (d) What are multidimensional or Hypervolume niche? Explain with suitable examples. Explain the concept of resource partitioning and character displacement. 2+3
- (e) Mention the measures taken by the Sundarban Tiger-Reserve Authorities in the Sundarban Reserve Forest. 5



WEST BENGAL STATE UNIVERSITY
B.Sc. Honours 1st Semester Examination, 2019

ZOOACOR01T-ZOOLOGY (CC1)



Time Allotted: 2 Hours

Full Marks: 40

The figures in the margin indicate full marks
Candidates should answer in their own words and adhere to the word limit as practicable.

GROUP-A

1. Answer any *eight* questions from the following:

2×8 = 16

- (a) Differentiate between cytostome and cytopyge.
- (b) What is Ookinete?
- (c) Name the different larval stages of *Fasciola* sp. ✓
- (d) What is dactylozoid? ✓
- (e) Name one free living and one parasitic Platyhelminthes. ✓
- (f) Write the scientific name of 'Portuguese Man of War'. Why is it named so? ✓ 1+1
- (g) Mention two differences between Ostium and Osculum. ✓
- (h) What is coenosarc?
- (i) State two significances of micro nucleus during conjugation in *Paramecium* sp.
- (j) How many types of locomotory organs are found in Protozoa? Name them. 1+1
- (k) Define proglottid.
- (l) Distinguish between polyp and medusa.
- (m) What is radial and biradial symmetry?

GROUP-B

2. Answer any *three* questions from the following:

3×3 = 9

- (a) Draw and label the ultrastructure of cilia. 2+1
- (b) What are bracts? State two significances of polymorphism in Cnidaria. 1+2
- (c) Write about the periodicity of microfilariae. 3
- (d) What are the different factors responsible for the formation of coral reefs? 3



- (e) State the significance of process of conjugation in *Paramecium* sp.
 (f) State the salient features of Rotifera.
 (g) What is amoeboid movement? Differentiate between cilia and flagella.

GROUP-C

3. Answer any *three* questions from the following: 5×3 = 15
- (a) Classify Phylum Porifera up to classes with suitable examples. 5
- (b) Name the phylum and class of the following animals: 5
- (i) *Spongilla* sp. ~~Porifera~~ Porifera,
 (ii) Sea-fan Cnidaria,
 (iii) Liver fluke Platyhelminthes,
 (iv) *Physella* sp. Cnidaria
 (v) *Euplectella* sp. Porifera
- (c) To which phylum does the following structures belong and mention one function of each: 5
- (i) Comb plate Ctenophora
 (ii) Corona
 (iii) Contractile vacuole Protista
 (iv) Gastrovascular cavity Porifera
 (v) Scolex. Platyhelminthes.
- (d) What is hookworm? Describe the life cycle of *Ascaris lumbricoides* with proper diagram. 1+4
- (e) State the structural differences between the promastigote and amastigote stages of *Leishmania donovani* with a proper diagram. Write the pathogenicity of *Entamoeba histolytica*. 3+2

—x—



WEST BENGAL STATE UNIVERSITY
B.Sc. Honours 1st semester Examination, 2018
ZOOACOR02T-ZOOLOGY (CC2)



Time Allotted: 2 Hours

ECOLOGY

Full Marks: 40

*The figures in the margin indicate full marks.
Candidates should answer in their own words and adhere to the word limit as practicable.
All symbols are of usual significance.*

Group-A

1. Answer any *eight* questions from the following:

2×8 = 16

- What is a *k*-selected organism?
- State Liebig's law of minimum.
- Give scientific names of two Schedule-I (according to Indian Wildlife Protection Act) animals found in Sundarban.
- What is carrying capacity?
- Name a (- / -) and a (+ / -) biotic interactions.
- How species diversity is related to species evenness and dominance?
- What do you mean by allelopathy?
- Why an aquarium is not considered as ecosystem?
- If $N_t = 100$ and $R_0 = 0.5$, what is the value of N_{t+1} ?
- What is meant by stenothermal animal? Give example.

Group-B

2. Answer any *three* questions from the following:

3×3 = 9

- What is the main difference between static and cohort life table? Which one is more accurate? 2+1
- Mention the effects of light on three different kinds of living organisms.
- Explain three types of survivorship curves followed by different organisms.



CBCS/B.Sc./Hons./1st Sem./Zoology/ZOOACOR02T/2018

- (d) Briefly describe the vertical stratification in a tropical pond community. 1+2
- (e) Define the competitive exclusion principle. In the Lotka-Volterra competition model, what is implied if $\alpha = \beta$?

Group-C

3. Answer any *three* questions from the following: 5×3 = 15
- (a) What is ecotone? How edge effect is important in conservation of wildlife? 2+3
- (b) What is ecological succession? What do you mean by a climax community? Give one example of secondary succession. 2+2+1
- (c) What is Universal energy flow model? Why do food chain in real ecosystem hardly include more than 4-5 trophic levels? 2+3
- (d) Discuss *ex-situ* and *in-situ* modes of conservation with proper examples. 2.5+2.5
- (e) Differentiate between grazing and detritus food chain with suitable examples. No two species can coexist if they occupy the same niche — Explain with reasons. 2.5+2.5