

**THIRD SEMESTER (CBCSS—UG) DEGREE EXAMINATION  
NOVEMBER 2020**

Zoology

ZOL 3C 03T—PHYSIOLOGY AND ETHOLOGY

Time : Two Hours

Maximum : 60 Marks

**Section A**

*Answer at least **eight** questions.*

*Each question carries 3 marks.*

*All questions can be attended.*

*Overall Ceiling 24.*

1. What is meant by vesicular transport ?
2. What is Obesity ? Enlist the major causes of obesity.
3. What is BMR ? Mention the factors affecting it.
4. Define the terms a) Hypoxia ; and b) Asphyxia.
5. What is meant by chloride shift ?
6. Distinguish between arteriosclerosis and atherosclerosis.
7. What is Haemodialysis ?
8. What is rigor mortis ?
9. What are neurotransmitters ? Give two examples.
10. What is sexual selection theory ?
11. What is Diapause ? Mention the types.
12. What is Imprinting ?

(8 × 3 = 24 marks)

**Section B**

*Answer at least **five** questions.*

*Each question carries 5 marks.*

*All questions can be attended.*

*Overall Ceiling 25.*

13. Describe the fluid mosaic model of plasma membrane.
14. Give an account of digestion of carbohydrates in man.

**Turn over**

15. Explain the mechanism of respiratory gas exchange. Enlist the major factors influencing gas exchange.
16. Briefly describe the mechanism of blood coagulation.
17. Explain urea cycle.
18. Write a brief account of electron microscopic structure of skeletal muscle fibre.
19. How does the endocrine system control animal behaviour ?

(5 × 5 = 25 marks)

### Section C

*Answer any **one** question.  
The question carries 11 marks.*

20. With the help of a diagram explain the structure and functioning of human heart.
21. Describe the different types of communication in animals.

(1 × 11 = 11 marks)

**THIRD SEMESTER (CBCSS—UG) DEGREE EXAMINATION  
NOVEMBER 2020**

Zoology

ZOL 3B 03T—ANIMAL DIVERSITY : CHORDATA—Part I

Time : Two Hours

Maximum : 60 Marks

**Section A**

*Answer at least **eight** questions.*

*Each question carries 3 marks.*

*All questions can be attended.*

*Overall Ceiling 24.*

1. Explain why the class Larvacea of the subphylum Urochordata is so called ?
2. What is endostyle in Branchiostoma ?
3. Mention the modifications of notochord in chordates.
4. Why Ascidia is referred to as a tunicate ?
5. What is Agnatha ?
6. Write a brief note on *Latimeria*.
7. What do you know about the fish 'Miss Kerala' ?
8. What is heterocercal caudal fin ? Give an example.
9. What is purple frog ? Mention its significance.
10. Mention the adaptations of *Rhacophorus*.
11. Mention the significance of synapsid reptiles.
12. Mention the identifying features of *Daboia russellii*.

(8 × 3 = 24 marks)

**Turn over**

**Section B**

Answer at least **five** questions.

Each question carries 5 marks.

All questions can be attended.

Overall Ceiling 25.

13. Explain the characters shared by the chordates with non-chordates.
14. Discuss the affinities of urochordaites.
15. Explain the salient features of the subphylum Vertebrata.
16. Explain the general external morphology of *Mugil cephalus*.
17. Write the salient features of the class Chondrichthyes. Add a note on *Trygon*.
18. Write a note on two limbless amphibians.
19. Mention the salient features of the order Crocodilia. Give an example.

(5 × 5 = 25 marks)

**Section C**

Answer any **one** question.

Each question carries 11 marks.

20. With a labeled diagram explain the digestive system of *Calotes versicolor*.
21. With a labeled diagram explain the arterial system of *Hoplobatrachus tigerinus*.

(1 × 11 = 11 marks)

**THIRD SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION  
NOVEMBER 2020**

Zoology

ZOL 3C 03—PHYSIOLOGY, TOXICOLOGY AND ETHOLOGY

Time : Three Hours

Maximum : 64 Marks

**Part A**

I. One Word Questions. Answer *all* questions. Each question carries 1 mark :

- 1 \_\_\_\_\_ is a dietary fibre.
- 2 The risk of obesity and heart disease is increased by a diet high in \_\_\_\_\_.
- 3 Respiratory centre is located in \_\_\_\_\_.
- 4 Mountain sickness is due to \_\_\_\_\_.
- 5 The term which is used for learning that does not respond to stimuli.
- 6 Pulmonary artery drains deoxygenated blood from \_\_\_\_\_.
- 7 When a muscle fibre contracts, it contracts completely. This principle is called \_\_\_\_\_.
- 8 Colour that can be observed in nitric acid toxicity is \_\_\_\_\_.
- 9 \_\_\_\_\_ vein has maximum concentration of urea.
- 10 \_\_\_\_\_ is an enzyme that breaks down acetylcholine.

(10 × 1 = 10 marks)

**Part B**

II. Short answer Questions. Answer any *seven* questions. Each question carries 2 marks :

- 11 What is circadian rhythm ?
- 12 What are Biotoxins ?
- 13 What is Summation ?
- 14 What is Haemostasis ?
- 15 What is Anorexia ?

**Turn over**

- 16 What is myocardial infarction ?
- 17 What is an action potential ?
- 18 What is Instinct ?
- 19 What is radioactive poisoning ?
- 20 What is territorial behaviour ?

(7 × 2 = 14 marks)

### Part C

III. Paragraph Questions. Answer any *four* questions. Each question carries 5 marks :

- 21 Importance of fibre in food.
- 22 Hormonal factors that influence behaviour.
- 23 Toxic effects of food additives.
- 24 Hormonal control of kidney function.
- 25 Social organization in mammals.
- 26 Respiratory problems of high altitudes.

(4 × 5 = 20 marks)

### Part D

IV. Essay Questions. Answer any *two* question. Each question carries 10 marks :

- 27 Give an account on learned behaviour.
- 28 Describe the structure of plasma membrane.
- 29 Give an account of exchange of gases in human body.
- 30 Explain how a nerve impulse is conducted along a nerve fibre.

(2 × 10 = 20 marks)

**THIRD SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION  
NOVEMBER 2020**

Zoology

ZOL 3B 03—ANIMAL DIVERSITY : CHORDATA—I

Time : Three Hours

Maximum : 80 Marks

**Part A**

*Answer all ten questions.  
Each question carries 1 mark.*

Identify the correct answer :

1. The animal that possess notochord throughout life is :
  - a) Fish.
  - b) Snake.
  - c) Bird.
  - d) Amphioxus.
2. Retrogressive metamorphosis is found in :
  - a) Balanoglossus.
  - b) Branchiostoma.
  - c) Herdmania.
  - d) All of the above.
3. Vertebral column is derived from :
  - a) Dorsal nerve chord.
  - b) Notochord.
  - c) Ventral nerve chord.
  - d) Outgrowth of cranium.
4. Cartilaginous fish do not contain :
  - a) Gill cover or operculum.
  - b) Fins.
  - c) Mouth.
  - d) Scales.
5. Paired fins of fishes are :
  - a) Dorsal and ventral.
  - b) Caudal and ventral.
  - c) Pectoral and pelvic.
  - d) Pectoral and caudal.

Name or fill up the following :

6. Neoteny is found in the larva of \_\_\_\_\_.
7. Herpatologists are biologists who focus on \_\_\_\_\_.

**Turn over**

8. Reptiles have ————— type of kidney.
9. *Rhacophorus* belongs to the order —————.
10. In adult amphibians nitrogen wastes are excreted as —————.

(10 × 1 = 10 marks)

### Part B

Give short answers to any **ten** of the following questions.

Each question carries 2 marks.

11. What features of amphibians make them dependent on water to survive ?
12. Name the subclasses of Class Reptilia.
13. What is Plastron ?
14. What is Jacobson's organ ?
15. Write short notes on *Uraeotyphlus*.
16. Write short notes on *Rastrelliger*.
17. Give four basic chordate characteristics.
18. Write the salient features of Class Larvacea. Give one example.
19. Write the key features of Agnatha.
20. Name the ventricles of frog brain.
21. Write short notes Alligator.
22. Write short notes on *Daboia*.

(10 × 2 = 20 marks)

### Part C

Answer any **five** of the following questions in about a **paragraph** each.

Each question carries 6 marks.

23. Give salient features of Sub-phylum Urochordata and classify up to class. With one example each.
24. Give an account on morphology of *Amphioxus*.
25. Write the features of class Chondrichthyes and classify up to order.
26. Give an account on urinogenital system of mullet.
27. Give an account on digestive glands of frog.
28. Write down the major features of the order Apoda and give adaptive features of *Ichthyophis*.



29. Explain the identification key for poisonous snakes.
30. Write the salient features of sub-class Anapsida and classify up to orders with one example for each.

(5 × 6 = 30 marks)

### Part D

*Write an Essay on any two of the following questions.*

*Each question carries 10 marks.*

31. Write the salient features of Class Amphibia and classify up to order, giving specific features and two examples each.
32. Give a detailed account on the organisation of ascidia and explain its metamorphosis.
33. Describe the nervous system and sense organs of mullet.
34. Give an account on the circulatory system of *Calotes*.

(2 × 10 = 20 marks)

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**THIRD SEMESTER (CUCBCSS—UG) SPECIAL DEGREE EXAMINATION  
NOVEMBER 2019**

Zoology

ZOL 3B 03—ANIMAL DIVERSITY : CHORDATA-I

Time : Three Hours

Maximum : 80 Marks

**Part A**

I. One Word Questions. Answer *all* questions. Each question carries 1 mark :

- 1 Stem reptiles belong to the order \_\_\_\_\_.
- 2 Tail fin of *Scoliodon* is \_\_\_\_\_ type.
- 3 Mention the genus name of flying frog.
- 4 Mention one non-poisonous snake common in Kerala.
- 5 Body of mullet is covered with \_\_\_\_\_ scales.
- 6 Name the order to which tortoises belong to.
- 7 Mention a Urochordate exhibiting alternation of generations.
- 8 \_\_\_\_\_ is an extinct fish.
- 9 Frog has \_\_\_\_\_ pairs of cranial nerves.
- 10 The point from where optic nerves come out of vertebrate eye is called \_\_\_\_\_.

(10 × 1 = 10 marks)

**Part B**

II. Short Answer Questions. Answer any *ten* questions. Each question carries 2 marks :

- 11 Name the ventricles in the brain of frog.
- 12 Explain neoteny citing suitable example from Amphibia.
- 13 What is ductus caroticus ?
- 14 Write down the adaptations of *Chamaeleon*.
- 15 Explain air bladder in Mullet.
- 16 Distinguish between pulmonary and systemic circulation.

Turn over

- 17 What is sciatic plexus ?
- 18 Name the aortic arches of frog.
- 19 Write notes on Ammocoetus larva.
- 20 What is nuptial pad ?
- 21 Name the zooids of *Doliolum* and mention their functions.
- 22 Distinguish between crocodiles and alligators.

(10 × 2 = 20 marks)

### Part C

III. Paragraph Questions. Answer any five questions. Each question carries 6 marks :

- 23 What are lung fishes ? Explain their characters and distribution.
- 24 With the help of a diagram, explain the structure of the brain of Calotes.
- 25 Explain retrogressive metamorphosis in Ascidia
- 26 Describe the fundamental Chordate characters.
- 27 Discuss the affinities of *Branchiostoma*.
- 28 Explain the characters of Order Rhychocephalia. Mention one example.
- 29 Explain the structure of lateral line organs of Mullet.
- 30 Describe the respiratory mechanism in Frog.

(5 × 6 = 30 marks)

### Part D

IV. Essay Questions. Answer any *two* questions. Each question carries 10 marks :

- 31 Describe the structure of the eye of frog with the help of a labeled diagram.
- 32 Explain the identification key for poisonous snakes of Kerala.
- 33 Classify Amphibia up to orders giving diagnostic features and citing examples.
- 34 With the help of labeled sketches, describe the digestive system of Mullet.

(2 × 10 = 20 marks)

**THIRD SEMESTER (CBCSS—UG) DEGREE EXAMINATION  
NOVEMBER 2021**

Zoology

ZOL 3C 03T—PHYSIOLOGY AND ETHOLOGY

(2019—2020 Admissions)

Time : Two Hours

Maximum : 60 Marks

**Section A (Short Answer Questions)**

*Answer at least **eight** questions.*

*Each question carries 3 marks.*

*All questions can be attended.*

*Overall Ceiling 24.*

1. Distinguish between phagocytosis and pinocytosis.
2. What is the role of HCl in digestion ?
3. What is CO poisoning ?
4. Write any *two* physiological adaptations of diving mammals.
5. What is SA node ?
6. Distinguish between hemostasis and hemolysis.
7. Distinguish between ureotelism and uricotelism.
8. What is muscle fatigue ?
9. What are glial cells ? Mention the types.
10. What is meant by circadian rhythm ?
11. Distinguish between aestivation and hibernation.
12. Define the terms taxis and kinesis.

(8 × 3 = 24 marks)

**Turn over**

**Section (Paragraph Questions)**

*Answer at least five questions.*

*Each question carries 5 marks.*

*All questions can be attended.*

*Overall Ceiling 25.*

13. Briefly explain the transmembrane transport.
14. Describe the digestion and absorption of lipids in man.
15. Describe the conducting system of heart.
16. Give an account of hormonal control of kidney function.
17. Explain the mechanism of muscle contraction.
18. What is meant by resting potential ? How is it maintained in neurons ?
19. Write an account of social behaviour of elephants.

(5 × 5 = 25 marks)

**Section C (Essay Questions)**

*Answer any one question.*

*The question carries 11 marks.*

20. Explain the mechanisms of transport of respiratory gases.
21. Describe different forms of learning behaviour in animals.

(1 × 11 = 11 marks)

**THIRD SEMESTER (CBCSS-UG) DEGREE EXAMINATION  
NOVEMBER 2021**

Zoology

ZOL 3B 03T—ANIMAL DIVERSITY : CHORDATA—PART I

(2019—2020 Admissions)

Time : Two Hours

Maximum : 60 Marks

**Section A**

*Answer atleast **eight** questions.*

*Each question carries 3 marks.*

*All questions can be attended.*

*Overall ceiling 24.*

1. Mention the typical chordate features of ascidian tadpole.
2. Mention the salient features of the class Thaliacea.
3. What is axiate organization ?
4. Mention the habit and the habitat of *Branchiostoma*.
5. Write briefly on the larva of *Petromyzon*.
6. Write briefly on two subterranean fishes from Kerala.
7. Write brief note on *Chimaera*.
8. Distinguish between cartilage bone and membrane bone.
9. Write a brief note on the recent findings of frog diversity from the western ghats.
10. What do you know about axolotl larva ?
11. Citing examples distinguish between Anapsida and Diapsida.
12. Mention the arboreal adaptations of *Chamaeleo*.

(8 × 3 = 24 marks)

**Section B**

*Answer atleast **five** questions.*

*Each question carries 5 marks.*

*All questions can be attended.*

*Overall ceiling 25.*

13. With a diagrammatic representation explain the fundamental chordate characters.
14. Write the primitive, specialized and degenerate features of *Branchiostoma*.

**Turn over**

15. Explain the salient features of the class Cyclostomata. Mention an example.
16. Write a note on lung fishes.
17. Explain the structure of the pelvic girdle of *Calotes versicolor*.
18. Mention the salient features of the class Amphibia.
19. Write a note on *Sphenodon*.

(5 × 5 = 25 marks)

### Section C

*Answer any one questions.*

*The question carries 11 marks.*

20. With a labeled diagram explain the digestive system of *Mugil cephalus*.
21. With illustrations explain the vertebral column of *Hoplobatrachus tigerinus*.

(1 × 11 = 11 marks)

**THIRD SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION  
NOVEMBER 2021**

**Zoology**

**ZOL 3C 03—PHYSIOLOGY, TOXICOLOGY AND ETHOLOGY**

(2014—2018 Admissions)

Time : Three Hours

Maximum : 64 Marks

**Part A**

I. One Word Questions. Answer *all* questions. Each question carries 1 mark :

- 1 Head of the phospholipids are \_\_\_\_\_ in nature.
- 2 Dietary fibre is found in the \_\_\_\_\_ parts of cereals, fruits and vegetables.
- 3 Absorption of nutrients takes place in \_\_\_\_\_.
- 4 Haemostasis is the body's normal physiological response for the prevention and stopping of \_\_\_\_\_.
- 5 Thrombosis is the formation of a blood clol within \_\_\_\_\_.
- 6 \_\_\_\_\_ side of the kidney preferred for kidney transplantation.
- 7 Glial cells are located in \_\_\_\_\_.
- 8 Malathion is the \_\_\_\_\_ insecticide.
- 9 \_\_\_\_\_ behaviors are closely controlled by genes with little or no environmental influence.
- 10 \_\_\_\_\_ can be defined as a response of an organism to the timing and duration of light and dark.

(10 × 1 = 10 marks)

**Part B**

II. Short Answer Questions. Answer any *seven* questions. Each question carries 2 marks :

- 11 What are the components of plasma membrane ?
- 12 Give any two importance of fibre in food.

**Turn over**



- 13 Give the difference between agglutination and coagulation.
- 14 Define nephritis and its causes.
- 15 Define Myofilament.
- 16 Define neurotransmitters with example.
- 17 Write the Health effects of carbon monoxide from automobiles.
- 18 Give the symptoms of arsenic poisoning.
- 19 Define Habituation behavior in animals with examples.
- 20 What is circadian rhythms ?

(7 × 2 = 14 marks)

### Part C

III. Paragraph Questions. Answer any *four* questions. Each question carries 5 marks :

- 21 Explain the fluid mosaic model of plasma membrane.
- 22 Explain in detail about the structure and functions of respiratory pigment in human beings.
- 23 Give a brief account on mechanism of muscle contraction.
- 24 Give a brief account on MRI scanning.
- 25 Give a brief account on toxicity mechanism of mercury.
- 26 Give the difference between innate and learned behavior.

(4 × 5 = 20 marks)

### Part D

IV. Essay Questions. Answer any *two* questions. Each question carries 10 marks :

- 27 Describe in detail about the Passive and active mechanism of membrane transport.
- 28 Give an detailed account on structure and functions of heart with neat sketch.
- 29 Describe in detail about the different types of neurotransmitter and their functions.
- 30 Describe in detail about the history, scope and branches of ethology.

(2 × 10 = 20 marks)

**THIRD SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION  
NOVEMBER 2021**

Zoology

ZOL 3B 03—ANIMAL DIVERSITY : CHORDATA I

(2014—2018 Admissions)

Time : Three Hours

Maximum : 80 Marks

**Part A**

I. One Word Questions. Answer *all* questions. Each question carries 1 mark :

- 1 Mention one example for Agnatha \_\_\_\_\_.
- 2 Tail fin of Mullet is \_\_\_\_\_ type.
- 3 *Sphenodon* belongs to the order \_\_\_\_\_.
- 4 The venom of krait is \_\_\_\_\_ type.
- 5 Body of *Scoliodon* is covered with \_\_\_\_\_ scales.
- 6 Name the order to which *Necturus* belongs to.
- 7 Mention the name of a legless Amphibian.
- 8 \_\_\_\_\_ is a nonpoisonous snake.
- 9 Calotes has \_\_\_\_\_ pairs of cranial nerves.
- 10 \_\_\_\_\_ is an aquatic reptile.

(10 × 1 = 10 marks)

**Part B**

II. Short Answer Questions. Answer any *ten* questions. Each question carries 2 marks :

- 11 Name the eye ball muscles of frog.
- 12 Comment on the discovery of *Nasikabatrachus sahyadrensis*.
- 13 Write notes on hag fishes.
- 14 Write down the adaptations of *Rhacophorus*.
- 15 What are Solenocytes ? Mention their function.

**Turn over**

- 16 Distinguish between pulmonary and systemic circulation.
- 17 Write notes on intestine of Mullet.
- 18 Name the aortic arches of Calotes.
- 19 Write notes on neoteny.
- 20 What is retrogressive metamorphosis? Give example.
- 21 Explain sexual dimorphism in frog.
- 22 Distinguish between turtles and tortoises.

(10 × 2 = 20 marks)

### Part C

III. Paragraph Questions. Answer any *five* questions. Each question carries 6 marks :

- 23 Write an account on the common poisonous snakes of Kerala.
- 24 With the help of a diagram, describe the male reproductive system of frog.
- 25 Explain respiratory system of Mullet.
- 26 Classify Urochordata down to classes giving diagnostic features. Mention one example from each class.
- 27 What are lung fishes? Explain their pattern of distribution citing suitable examples.
- 28 Classify subclass Anapsida up to order. Mention one example for each order.
- 29 Explain the structure of eye of Mullet.
- 30 Describe the fundamental Chordate characters.

(5 × 6 = 30 marks)

### Part D

IV. Essay Questions. Answer any *two* questions. Each question carries 10 marks :

- 31 Describe the structure of the brain of Calotes with the help of a labeled diagram.
- 32 Explain the affinities and systematic position of *Branchiostoma*.
- 33 Classify Super class Pisces up to orders giving diagnostic features and citing examples.
- 34 With the help of labeled sketches, describe the structure of the heart of frog. Add a note on the direction of blood flow.

(2 × 10 = 20 marks)