Roll No. .....

E–1013

M. Sc. (Fourth Semester) (Main/ATKT)

EXAMINATION, May-June, 2021

ZOOLOGY

(Optional Group—A)

Paper Third

[Fish (Ichthyology) Structure and Function]

Time : Three Hours] [*Maximum Marks : 80*

Note : Attempt all Sections as directed.

Section—A 1 each

(Objective/Multiple Choice Questions)

Note : Attempt all questions.

Choose the correct answer :

1. Acanthodians or Gnathostomes were originated in the :

   (a) Late Silurian

   (b) Late Devonian

   (c) Early Devonian

   (d) Early Silurian

2. *Latimeria chalumnae* is a/an :

   (a) Living crossopterygian

   (b) Ostracoderm

   (c) Cyclostomes

   (d) Reed fish

3. The largest family of bony fishes is :

   (a) Heterodontidae

   (b) Pristidae

   (c) Coelacanthidae

   (d) Cyprinidae

4. Yawn is :

   (a) Movement of heat

   (b) Movement of tail

   (c) Movement of body

   (d) None of the above

5. Changes in the intestine take place in the following fish in different habitats :

   (a) *Oncorhynchus*

   (b) *Petromyzon*

   (c) *Anguilla*

   (d) *Protopterus*

6. The skin is used as a respiratory organ in :

   (a) All fishes

   (b) Elasmobranchs

   (c) *Acipenser*

   (d) *Amphipnous cuchia*

7. In Cypriniformes, the air bladder is connected with internal ear through :

   (a) Diverticulum

   (b) Pro-otic bone

   (c) Weberian ossicles

   (d) None of the above

8. Otoliths show :

   (a) Growth zones

   (b) Semicircular canals

   (c) Transverse canal

   (d) All are correct

9. Some fishes pump urea back into the blood, they are :

   (a) All fishes

   (b) Elasmobranchs

   (c) Bony fishes

   (d) Fishes of family Cyprinidae

10. The vesicles of savi are found in :

    (a) Several genera of rays

    (b) Carps

    (c) All fishes

    (d) Cat fishes

11. Luciferase enzyme is found in :

    (a) Deep sea fishes

    (b) Hill stream fishes

    (c) Luminescent fishes

    (d) None of the above

12. Mirror cells are responsible for :

    (a) Colour

    (b) Protection

    (c) Formation of scales

    (d) None of the above

13. “Grawling like dogs” sound is produced by :

    (a) Globe and trunk fishes

    (b) Globe and drum fishes

    (c) Trunk and cat fishes

    (d) Cat fishes and drum fishes

14. Which of the following is a tripod fish ?

    (a) Linophryne

    (b) Eupharynx

    (c) Saccopharynx

    (d) Bathypterois

15. Which conditions are common in hill streams ?

    (a) High current velocity

    (b) High oxygen concentration

    (c) Rocky substratum

    (d) All of the above

16. DI is :

    (a) Dobryal Index

    (b) Diversity Index

    (c) Digestive Index

    (d) None of the above

17. Which of the following fish species is parthenogenetic ?

    (a) Anguilla

    (b) Hilsa

    (c) Schizothorax

    (d) Poecilia

18. "Sac fry" is :

    (a) having yolk sac

    (b) not having yolk sac

    (c) having paired fins

    (d) None of the above

19. A nest is prepared by the following fish for showing parental care to young, which option is incorrect ?

    (a) All fishes

    (b) *Protopterus*

    (c) *Amia*

    (d) *Arius*

20. Cyclic changes in testis exhibit number of phases :

    (a) 5

    (b) 3

    (c) 7

    (d) 2

Section—B 2 each

(Very Short Answer Type Questions)

Note : Attempt all questions in two or three sentences.

1. Explain living fossil in fishes.
2. Explain the dermal denticles.

3. Name the forces which act on body of fish during locomotion.
4. Define fecundity.
5. Write down the *four* causes of migration in fishes.
6. Explain the stridulating organs in fishes.
7. Define follicular atresia.
8. What is feeding intensity ?

Section—C 3 each

(Short Answer Type Questions)

Note : Attempt all questions in 75 words.

1. Describe the connection of Weberian ossicles with membranous labyrinth.
2. Explain the primitive characters of Cyclostomes.
3. Describe the neural control of colour change mechanism.
4. Write down the air breathing organs of *Anabas*.
5. Describe the *four* categories of fish food.
6. Explain the ampullary organ in fishes.
7. Explain the *six* conditions in deep sea.
8. Describe the gas secreting complex in fishes.

Section—D 5 each

(Long Answer Type Questions)

Note : Attempt all questions in 150 words.

1. Write down the histology of integument of fish.

Or

Explain the different types of locomotion in fishes.

2. Explain the different types of teleostean kidneys.

Or

Explain the lateral line canals in *Wallago attu*.

3. Give a detailed account on modifications in hill stream fishes.

Or

Explain colouration in fishes.

4. Describe the migration in fishes.

Or

Explain the parental care in fishes.