

2020
Gurudas College
ZOOLOGY- HONOURS

Paper: SEC- B (1)

Full Marks: 50

Time: 2 hrs 30 mins

Part-A

The figures in the margin indicate full marks.

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

Answer **any twenty** of the following:

20 x 2= 40

1. Write any two useful criteria for aquarium fish?
2. What is the characteristic feature of Characins? Give one example of it.
3. Name two diseases of larvivorous fish and their causative agents.
4. Mention the features of loaches.
5. Give the scientific name of Dwarf Chameleon and Siamese fighting fish.
6. Mention the symptoms of Gill rot and Trichodinosis.
7. What are the packing procedure and precautions in case of larvivorous fish?
8. Calculate 50% crude protein using fish meal, corn gluten meal, wheat meal and soybean meal. Fish meal 65%, Corn gluten meal 38%, Soybean meal: 52% , Wheat meal: 17%.
9. Give the name of two dominant species of aquarium fishes found in the Lakshadweep.
10. Give one example of each egg depositor and egg buriers.
11. What do you mean by FCR? How do you calculate the same?
12. What are scrapers and what is that used for?
13. What are binding agents? Give examples.
14. Name two larvivorous fish.
15. Name different types of feeding techniques in fishes.
16. Write in brief about sexual dimorphism of guppy.

17. Mention the preferable pH range of goldfish and butterfly fish in aquarium water.
18. What is meant by the 'Tholichthys' larval stage? In which aquarium fish this stage can be found?
19. What are the functions of ornamental plants in aquariums?
20. What is an anti-nutrient? Give one example.
21. Write two principles of fish transport.
22. What is meant by the loading density of aquarium fish during fish transport? Mention the loading density of gold fish.
23. What is the role of preservatives and attractants in fish feeds?
24. What are the different amounts of feed given to fish at various stages of development?
25. Why are fish toxicants used?
26. What is protandrous hermaphrodites? In which aquarium fish this special character can be found?
27. Give the treatment protocol of *Tetrahymena* infection of guppy in the pre-packing or transport water?
28. Write in brief about the importance of biological filters in an aquarium.
29. Give the scientific name of swordtail. Why is it named so?
30. Write in brief about sexual dimorphism of blue morph.

Part-B **Internal Assessment**

Choose the correct alternative for *any ten* from the following:

10 x 1=10

1. Featherback is the common name of
 - a. Clown fish
 - b. Gold fish
 - c. Knife fish
 - d. Parrot fish
2. Oxygen: water ratios in packing ornamental fish for air transport range from---
 - a. 5.1-7.1
 - b. 3.1-4.1
 - c. 2.1-3.1

- d. 4:1-6:1
3. The role of Beef heart in fish feed is
- Source of protein.
 - Common sources of lipids in fish feeds.
 - Source of protein and as effective binder in feeds
 - To enhance the taste of fish feeds.

4. What are the general amounts of nutrients incorporated into diets for growing fish?

Nutrients	% in dry weight
I. Proteins	i. 1-2.5
II. Carbohydrates	ii. 32-45
III. Fats	iii. 1-2.5
IV. Minerals	iv. 10-30
V. Vitamins	v. 4-28

- I-i, II-ii, III-iii, IV-iv, V-v
 - I-ii, II-iii, III-iv, IV-v, V-ii
 - I-i, II-iii, III-ii, IV-iv, V-v
 - I-ii, II-iv, III-v, IV-i, V-iii
5. Which of the following is required for developing of nurseries for larvivorous fish
- Removal of predatory fish
 - Introduction of aquatic weeds
 - Removal of aquatic insects
- Choose the CORRECT option.
- I only
 - III only

- c. II and III only
 - d. I and III only
 - e. All of the above
6. Commercially important exotic egg layer fish is not -
- a. *Carassius auratus*
 - b. *Labeo bicolor*
 - c. *Xiphophorus helleri*
 - d. *Trichogaster trichopterus*
7. Angel fish can grow to a maximum length of
- a. 15 cm
 - b. 12 cm
 - c. 18 cm
 - d. 10 cm
8. Which supplementation is used for enhancing the stress resistance of Guppy?
- a. Vitamin A
 - b. Vitamin C
 - c. Vitamin B12
 - d. Vitamin D
9. The amount of dissolved oxygen required for a packing system depends on
- a. the number, size and species of fish packed in the system
 - b. the length, shape and species of fish packed in the system
 - c. the number, biomass and length of fish packed in the system
 - d. the number, biomass and species of fish packed in the system
10. Which is not in the cichlid group?
- a. Gold fish
 - b. Oscar
 - c. Angel
 - d. Discus
11. Which of the following characteristics is required in a potential larvivorous fish for anopheles

control?

- a. Must be a be a surface feeder
- b. Must have a sub-terminal mouth
- c. Must be large in size
- d. All of the above.

12. Goldfishes are sensitive to which of the colours:

- a. red, green, blue and yellow
- b. yellow, green, blue and ultraviolet
- c. red, yellow, green and ultraviolet
- d. red, green, blue and ultraviolet

13. Lower temperature (Less than 60°C) of water in pond requires diet for fish that is--

- a. Less content of proteins and higher content of carbohydrates
- b. Less content of carbohydrates and higher content of proteins
- c. Less content of proteins and higher content of fats
- d. Less content of carbohydrate and higher content of fats

14. The biocover of the rocks known as Aufwuchs. It is food of

- a. Butterfly fish
- b. Clown fish
- c. Blue morph
- d. Angel fish

15. Styrofoam boxes for packing ornamental fishes measure

- a. 50.0 cm x 40.5 cm x 36.5 cm
- b. 40.5 cm x 30.5 cm x 36.5 cm
- c. 48.5 cm x 26.5 cm x 26.5 cm
- d. 48.5 cm x 36.5 cm x 36.5 cm