

**U.G. 3rd Semester Examination - 2019****ZOOLOGY****[HONOURS]****Skill Enhancement Course (SEC)****Course Code : ZOOL(H)-SEC-01 & 02-T**

Full Marks : 40

Time : 2 Hours

*The figures in the right-hand margin indicate marks.**Candidates are required to give their answers in their own words as far as practicable.***Answer all the questions from Selected Option.****OPTION-A****ZOOL(H)-SEC-01-T**

1. Answer the following questions (any **five**):

 $2 \times 5 = 10$ 

- a) Write down the morphological differences between male and female sword tail with special reference to the structure of their caudal fin.
- b) Write down two characteristics differences between guppy and molly fish.
- c) Write down the scientific name of any two endemic aquarium fishes?

*[Turn over]*



- d) What is suspension feeder.
- e) State one disadvantage of anesthetics used for fish transport.
- f) How the pH of the transport water for fish can be managed?
- g) How brooders can be identified during breeding season?
- h) Write down the function of aerator in aquarium.

2. Answer the following questions (any two):

$5 \times 2 = 10$

- a) State the definition of exotic fish. Name any two exotic aquarium fishes. Mention their impact on native fishes.  $1+2+2$
- b) Name any one live bearer aquarium fish. State differences between the male and female of the particular fish species on the basis of primary and secondary sexual characteristics.  $1+4$
- c) How does sexual dimorphism in fish help in selecting the sex of the fish in sterilization experiments? Explain with suitable example.  $3+2$
- d) Write down the importance of live fish food organisms and their role on aquarium fish



keeping. Write a note on probiotics.

3+2

3. Answer the following questions (any two):

10×2=20

- a) Mention the techniques adapted for packing and transportation of aquarium fish. 5+5
- b) What is formulated feed? Write any two advantages of formulated fish feed. Write down the steps in feed formation. Mention the preparation of pelleted fish feed. 2+2+4+2
- c) Briefly explain the common characters and sexual dimorphism of butterfly fish or molly. 5+5
- d) Write down the characteristic changes of gold fish during breeding season? Write down the basic difference of fresh water and marine water aquarium? How the salinity of marine water aquarium can be maintained? 3+4+3



**OPTION-B**

**ZOOL(H)-SEC-02-T**

1. Answer any **five** of the following:  $2 \times 5 = 10$

- a) What do you mean by Bee Bread?
- b) How many varieties of bees are found?
- c) Write down the chemical composition of honey.
- d) What do you mean by nuptial flight of honey bees?
- e) State the function of propolises.
- f) What is the functions of Drones? Whether drones haploid or diploid?
- g) What is bee wax? Write its uses.
- h) Write down two names of enemies of honey bee and their affect on honey bees.

2. Answer any **two** of the following:  $5 \times 2 = 10$

- a) Mention any two diseases of honey bees with their Causative agents. How these diseases are controlled?  $2+3$
- b) Write a note on standard Langstroth's chamber used in scientific bee culture with proper diagram.



c) What is bee language? How these languages are translated?  $2+3$

d) Write a note on the following:

i) Royal jelly

ii) Swarming

iii) Honeydew

iv) Pollen basket  $1\frac{1}{2}+1\frac{1}{2}+1+1$

3. Answer any **two** of the following questions :

$$10 \times 2 = 20$$

a) What is the importance of apiculture? How are the bees divided in a bee hive? What work does each of them do?  $2+4+4$

b) Describe the improved method of bee keeping practised in India. What is the meaning of the term "bee pastorage"?  $8+2$

c) Describe in brief the life history of *Apis cerana indica*. Why are honey bees so fascinating?  $7+3$

d) Write down different uses of the bee keeping equipments in apiculture. State the uses of propolis in bee colony.  $7+3$