

**2018**

**CBCS**

**3rd Semester**

**ZOOLOGY**

**PAPER—SEC1T**

**(Honours)**

*Full Marks : 40*

*Time : 2 Hours*

*The figures in the right-hand margin indicate full marks.*

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

*Illustrate the answers wherever necessary.*

***Apiculture***

*Answer all questions*

***Group—A***

1. Answer any *five* questions :

5×2

(a) Write the chemical composition of honey.

*(Turn Over)*

(b) How do you distinguish a queen from a worker bee ?

(c) Name one bacterial and one protozoan disease of honey bee.

(d) State the uses of bee-wax.

(e) What is apiary ?

(f) Write the selection criteria of bee species.

(g) What is Royal Jelly ?

(h) What do you mean by pollen basket ?

2. Answer any *four* questions : 4×5

(a) (i) 'Diet is the major caste determining factor in a bee colony'— Explain. 3

(ii) What are the selection criteria for a good apiary site ? 2

- (b) Provide an illustrated description of Langstroth's box used in apiculture. 5
- (c) (i) State the uses of the following equipments in bee-keeping industry :
- Queen Excluder
  - Super
  - Uncapping Knife
  - Smoker. 4
- (ii) Which species of honey bee is widely used in India in bee-keeping? 1
- (d) (i) What is swarming? 1
- (ii) What causes swarming? 1
- (iii) Mention the problems associated with swarming. 3

(e) Write the name of bee enemies and mentioned their control measures. 3+2

(f) Describe briefly on modern method of extraction of honey. 5

**Group—C**

3. Answer any *one* question : 1×10

(a) (i) Mention the prerequisites for artificial bee rearing. 5

(ii) What are the architectural designs of Beehives? 5

(b) (i) Name the different species of honey bees domesticated in the world. 2

(ii) What are the benefits of bee-keeping and how does it act as an input for sustainable development of agriculture? 3

- (iii) Mention the causative agent, symptoms and control measures of chalkbrood disease of honey bee. 5
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### ***Aquarium Fish Keeping***

#### ***Group—A***

1. Answer any *five* questions :

5×2

- (a) What are the criteria for selection of fish species for home aquarium ?
- (b) What is an aquarium ?
- (c) Write the scientific names of four exotic ornamental fishes.
- (d) State the food and feeding behaviour of Angel fish.

- (e) State about exotic ornamental fishes. Give two examples.
- (f) What do you mean by aquascaping?
- (g) What do you mean by biofilter? State its importance in aquarium.
- (h) What do you mean by Sexual dimorphism? Write example of aquarium fish.

2. Answer *four* questions :

4×5

- (a) What is formulated feed? Write the ideal composition of formulated feed for ornamental fishes. 1+4
- (b) Briefly write on the accessories used for setting up a home aquarium.
- (c) Briefly write on the ornamental fish transportation.

- (d) Write a note on different diseases of aquarium fish.
- (e) State about aquarium fish marketing in West Bengal.
- (f) Give an idea about the plan and budget for setting up an ornamental fish farm.

**Group—C**

3. Answer any *one* question : 1×10

(a) (i) Discuss the common diseases of ornamental fishes. Write the treatment procedures of these diseases.

(ii) Write a note on ornamental fish breeding with reference to live beaver species. 5+5

(b) (i) Mention the important criteria of a good ornamental fish.

- (ii) Give an idea about indigenous ornamental fishes in West Bengal.
- (iii) Add a note on feeding management of aquarium fishes.  $3+3\frac{1}{2}+3\frac{1}{2}$
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