

total number of printed pages-11

3 (Sem-3/CBCS) ZOO SE1/2

2024

ZOOLOGY

(Skill Enhancement Course)

Answer the Questions from any one Option.

**OPTION - A**

Paper : ZOO-SE-3014

**(Ornamental Fish and Fisheries)**

**OPTION - B**

Paper : ZOO-SE-3024

**(Apiculture)**

Full Marks : 50

Time : Two hours

**The figures in the margin indicate full marks for the questions.**

**Answer either in English or in Assamese.**

Contd.



**OPTION - A**

**(Ornamental Fish and Fisheries)**

Paper : ZOO-SE-3014

1. Choose the correct answers : **(any four)**

(1×4=4)

(a) The chromatophores responsible for imparting shiny due to fishes are

(i) Xanthophores

(ii) Iridophores

(iii) Melanophores

(iv) Erythrophores

(b) *Tetraodon cutcutia* is an ornamental fish of the fish group

(i) Minnows

(ii) Gourami

(iii) Puffer

(iv) Glass fish

(c) *Vallisneria* spp is also commercially known as

(i) Stonewort

(ii) Tape grass

(iii) Small leaves

(iv) Fanwort

(d) Saprolegniasis is a disease in fishes caused by

(i) viral infection

(ii) bacterial infection

(iii) protozoan infection

(iv) fungal infection

(e) Floating bubble nest is built by

(i) *Trichogaster* spp

(ii) *Anabus* spp

(iii) *Puntius* *sophore*

(iv) *Amblypharyngodon* *mola*



vii. (f) Hobby of keeping fishes in garden pools started in

(i) Italy

(ii) England

(iii) China

(iv) France

2. Answer the following questions : **(any three)**

2×3=6

(a) Define ornamental fish.

(b) What is krill ?

(c) What are planktons ? Mention one significance of planktons in an aquarium.

1+1=2

(d) What are the symptoms of white spot disease in fish ? Mention one mode of treatment for white spot disease.

1+1=2

(e) What is fecundity ?

3. Write short notes on : **(any two)** 5×2=10

(a) Aquarium filters

(b) Natural colour enhancers of ornamental fish

(c) Feed formulation

(d) Management practices in an aquarium

4. Answer the following questions : **(any three)**

(a) Give a brief account on the aquarium plant diversity in wetlands of Assam. Mention the significance of plants in an aquarium. 7+3=10

(b) Write a brief note on the ornamental fish group of North-Eastern region of India. 10

(c) Describe briefly about the construction of a home aquarium. 10



(d) What is hatching rate ? Give an account on the breeding of *Trichogaster* spp.

2+8=10

(e) What are the live food of ornamental fish ? Write briefly the pure culture of plankton.

2+8=10

(f) What are the infectious fish diseases generally found in aquarium ? How can it be prevented in aquarium ?

6+4=10

### OPTION - B

### (Apiculture)

Paper : ZOO-SE-3024

1. Fill in the blanks : 1×4=4

খালী ঠাই পূৰ কৰা :

(a) The largest species of honeybee is \_\_\_\_\_.

মৌ-মাখিৰ আটাইতকৈ ডাঙৰ প্ৰজাতিটো হ'ল \_\_\_\_\_।

(b) Honeybees are having \_\_\_\_\_ type of mouth parts.

মৌ-মাখিৰ মুখাংগ \_\_\_\_\_ ধৰণৰ।

(c) Drones are \_\_\_\_\_ male members of the bee colony.

দ্রোনবোৰ মৌচাকৰ \_\_\_\_\_ মতা সদস্য।

(d) Wax glands are modified \_\_\_\_\_.

মম গ্ৰন্থিবোৰ \_\_\_\_\_ ৰূপান্তৰ মাথোন।



2. Answer in brief:

2×3=6

চমুকৈ উত্তৰ দিয়া :

(a) Royal jelly of honeybees

মৌ-মাখিৰ ৰাজকীয় মৌ বা খাদ্য

(b) Bee venom or Apitoxin

মৌবিষ বা এপিটক্সিন

(c) Bee industries in India

ভাৰতবৰ্ষত মৌ-মাখিৰ উদ্যোগ

3. Answer the following questions : (any two)

5×2=10

তলৰ যিকোনো দুটা প্ৰশ্নৰ উত্তৰ লিখা :

(a) Morphology of worker bee.

কৰ্মী মৌ-মাখিৰ বহিঃগঠন।

(b) Swarming flight of honeybees.

মৌ-মাখিৰ জাক উৰন

(c) What is ovipositor? Write a note on ovipositor.

1+4=5

ডিম্বথলী কি? ডিম্বথলীৰ বিষয়ে এটি টোকা লিখা।

(d) Name two bacterial diseases of honeybees with their symptoms.

2½+2½=5

মৌ-মাখিৰ দুটা বেণ্টেৰিয়াজনিত ৰোগৰ নাম লিখা আৰু সিহঁতৰ লক্ষণৰ বিষয়ে লিখা।

4. What is the purpose of bee dance? Explain the communication process among bees through dance.

2+8=10

মৌ-মাখিৰ নৃত্যৰ উদ্দেশ্য কি? মৌ-মাখিবোৰৰ মাজত নৃত্যৰ দ্বাৰা সংযোগ স্থাপন কৰাৰ কৌশল ব্যাখ্যা কৰা।

Or/বা

Write about the importance and economics of beekeeping.

5+5=10

মৌ-পালনৰ প্ৰয়োজনীয়তা আৰু অৰ্থনৈতিক গুৰুত্বৰ বিষয়ে লিখা।



5. What is insect pollination? Discuss the role of honeybees about pollination of horticulture garden. 2+8=10

পতংগ পৰাগযোগ কি? উদ্যান শস্যৰ বাগিছাৰ পৰাগযোগৰ ক্ষেত্ৰত মৌ-মাখিৰ ভূমিকা উল্লেখ কৰা।

Or/বা

Describe the different types of cells found in a honeycomb of beehive. 10

মৌচাকৰ মৌবিচনীত থকা বিভিন্ন ধৰনৰ কোষসমূহ বৰ্ণনা কৰা।

6. What do you mean by artificial beekeeping method? Describe the different parts of Newton frame hive with labelled diagram. 2+6+2=10

কৃত্ৰিম মৌ পালন পদ্ধতি বুলিলে কি বুজা? নিউটন পদ্ধতিত ব্যৱহৃত বাকচৰ বিভিন্ন অংশবোৰ চিহ্নিত চিত্ৰসহ বৰ্ণনা কৰা।

Or/বা

What is polymorphism? Describe how the different castes of honeybees show their polymorphism in the beehive. 2+8=10

বহুৰূপতা কি? এটা মৌচাকত বিভিন্ন ধৰনৰ মৌ-মাখিৰে কেনেদৰে বহুৰূপতা প্ৰদৰ্শন কৰে বুজাই লিখা।