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**3 (Sem-6/CBCS) ZOO HE 1/2**

**2024**

**ZOOLOGY**

(Honours Elective)

**Answer the Questions from any one Option.**

**OPTION-A**

**(Biology of Insecta)**

Paper : ZOO-HE-6016

**OPTION-B**

**(Fish and Fisheries)**

Paper : ZOO-HE-6026

*Full Marks : 60*

*Time : Three hours*

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

*Contd.*



**OPTION-A**

**(Biology of Insecta)**

Paper : ZOO-HE-6016

1. Choose the correct option :  $1 \times 7 = 7$

(i) Ommatidia are associated with—

- (a) locomotion
- (b) digestion
- (c) vision
- (d) flight

(ii) The cuticle is secreted by—

- (a) epidermis
- (b) basement membrane
- (c) dermis
- (d) molting gland

(iii) Plumose antennae are found in

- (a) Termite
- (b) Mosquito
- (c) Cockroach
- (d) Butterfly

(iv) Sponging mouthparts are found in

- (a) Housefly
- (b) Mosquito
- (c) Butterfly
- (d) Grasshopper

(v) Which part of the alimentary canal acts as a reservoir of food in insects?

- (a) Midgut
- (b) Illium
- (c) Gizzard
- (d) Crop

(vi) Which of the following is an Ametabolous insect?

- (a) Termite
- (b) Collembola
- (c) Silkworm
- (d) Dragonfly



(vii) Corpora cardiaca is a part of

- (a) Respiratory system
- (b) Endocrine system
- (c) Excretory system
- (d) Integumentary system

2. Answer the following questions :

2×4=8

- (i) Name the different segments of an insect's leg.
- (ii) What is an ommatidium?
- (iii) What are the four main anatomical components of insect endocrine system?
- (iv) What is hemimetabolous metamorphosis?

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

5×3=15

- (i) Describe the mouthparts of a mosquito.
- (ii) Write briefly about excretion by Malpighian tubules.
- (iii) What are haemocytes? Mention some of their functions.

(iv) Write about different types of receptors in insects.

(v) Draw a labelled diagram of ommatidium.

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

10×3=30

- (i) Describe the social organization and social life of any insect.
- (ii) Describe different types of metamorphosis in insects.
- (iii) How are insects attracted towards host plants? Describe how plants protect themselves from insects.
- (iv) Mention some characters of insects of order Lepidoptera. Give some examples of insects of order Lepidoptera.
- (v) Write about houseflies and mosquitoes as insect vectors.
- (vi) Describe briefly the tracheal system of respiration in terrestrial insects.



**OPTION-B**

**(Fish and Fisheries)**

Paper : ZOO-HE-6026

1. Fill in the blanks :  $1 \times 7 = 7$

- (a) Fish migration in search of food and water is known as \_\_\_\_\_.
- (b) \_\_\_\_\_ is a soil sealant used for the treatment of porous soil in a fish farm.
- (c) Common name of *Vallisneria* sp is \_\_\_\_\_.
- (d) Tail and fin rot disease in fish is caused by \_\_\_\_\_.
- (e) Breweries use \_\_\_\_\_ made from swim bladder of sturgeon as filtering agent.
- (f) A mixture of chorionic gonadotropin and mammalian pituitary extract is known as \_\_\_\_\_.
- (g) \_\_\_\_\_ tubes are used to encourage plant growth in an aquarium.

2. Answer the following questions :  $2 \times 4 = 8$

- (a) What are red bodies ?
- (b) Write *two* advantages of polyculture.

(c) Write *two* causes of depletion of fishery resources.

(d) What is intensive culture of fish ?

3. Write short notes on : **(any three)**  
 $5 \times 3 = 15$

- (a) Transgenic fish
- (b) Fisheries law and regulations
- (c) Mechanoreceptors
- (d) Cage culture
- (e) Classification of fishes based on feeding habits

4. What is bioluminescence ? Give an account of bioluminescence in fishes with examples.  
 $2 + 8 = 10$

**Or**

Give an account of different scales of fishes with diagrams. How is scale of fish used for the determination of age ?  
 $8 + 2 = 10$

5. What is bundh breeding ? Describe briefly the method of hypophysation in carps.  
 $3 + 7 = 10$



**Or**

Explain the causative agent, symptoms and preventive measures of protozoan diseases in cultivable fishes. 3+5+2=10

6. Write a note on the different fishing crafts and gears used in fishery. 10

**Or**

Describe the different methods of preservation techniques of harvested fishes.

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