

2018
ZOOLOGY
ZOO : 304
ENTOMOLOGY AND FISHERY
Full Marks : 80
Time: 3 hours

The figures in the margin indicates full marks for the questions :

1. Answer the following multiple choice questions (any eight)

1x8=8

- I . Which of the following method is/are used to introduce genes in transgenic fish?
- a) transfer of whole nuclei
 - b) viruses
 - c) microinjection
 - d) all of the above
- II . Introduction of Silver Carp in Govind Sagar reservoir causes depletion of which of the fish species?
- a) Catla catla
 - b) *Mistichthys luzonensis*
 - c) *Poecilia reticulata*
 - d) *Gambusia affinis*
- III. According to World Health Organisation estimates, how many cases of dengue infection occur annually?
- a) 10 to 20 million
 - b) 50 to 100 million
 - c) 100 to 150 million
 - d) less than 10 million

IV. Which disease is caused by the bite of female sand fly?

- a) Malaria
- b) Dengue
- c) Leishmaniasis
- d) Chikungunya

V. Which one of the following produces eri or errandi silk?

- a) *Philisamia ricini*
- b) *Bombyx mori*
- c) *Antheraea assama*
- d) *Antheraea mylitta*

VI. Which one of the following is NOT an occasional ectoparasite?

- a) *Tabanus* sp.
- b) *Stomoxys*
- c) *Pediculus*
- d) *Chrysomya*

VII. Typhus fever is transmitted by

- a) *Xenopsylla*
- b) *Rickettsia prowazaki*
- c) *Pediculus humanus*
- d) *Aedes aegypti*

VIII. Which one of the following is long nosed cattle blood sucking lice?

- a) *Pthirus pubis*
- b) *H. eurysternus*
- c) *Pediculus capiti*
- d) *Linognathus (Haematopinus) vituli*

IX. Which one of the following is NOT a screw worm?

- a) *Chrysomya bezziana*
- b) *Cochliomyia hominivorax*
- c) *Cochliomyia macellaria*
- d) *Antheraea mylitta*

2. Answer the following short answer type questions (any five)

2x5=10

- I. What is intergeneric hybridization?
- II. What is a cryoprotectant?
- III. What do you understand by live gene bank?
- IV. Write in brief about host-pest interaction of screwworm and its host.
- V. Differentiate between bee bread and royal jelly
- VI. What is shellac? How is it different from seed lac?

3. Answer the following questions (any four)

5x4=20

- I. Write difference between dengue fever and severe dengue?
- II. What are the positive and negative impacts of exotic fishes on the native species?
- III. What is transgenesis? Is the production of a transgenic fish an economically viable option?
- IV. Explain silk synthesis in mulberry silkworm. Name two diseases and their pathogen in mulberry silkworm.

3+2

- V. Describe the beneficial role of insects by giving suitable examples.

4. Answer the following long type questions (any two)

9x2=18

- I. Name the different species of honeybees used for apiculture. Describe the life cycle, polymorphism and commercial culture of honeybees. 2+7
- II. What is cryopreservation? Write detail method of cryopreservation. 2+7
- III. Write a note on life cycle of *Glossina* sp. Mention the diseases caused by the fly and its control measures. 5+45

5. Answer the following very long type questions (any two) 12x2=24

- I. Which disease is caused by sandfly? Discuss the life cycle and also write different approaches to control the sandfly. **2+5+5**
- II. Describe the life history, culture and commercial products of Lac insect. Name some diseases and their causative organism in lac insect. **10+2**
- III. Name the vector and pathogen of malaria. Describe the life history of the vector in relation to the parasite. Add a note on its control. **2+7+3**
