2023

ZOOLOGY — HONOURS

Paper : DSE-A-1 and DSE-A-2

The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable.

Paper : DSE-A-1

(Parasitology)

Full Marks : 50

Answer ***question no.*** **1** and ***any four*** questions from the rest.

1. Answer ***any fifteen*** questions : 2×15

(a) Define parasitism. Give example of hyperparasitism.

(b) What are the differences between obligate and facultative parasite?

(c) What is Katayama fever?

(d) Mention the striking features of posterior region of male *Ascaris lumbricoides*.

(e) What are the diseases transmitted by *Cimex* sp.?

(f) What is cysticercosis?

(g) Mention the diagnosis of *Schistosoma haematobium*.

(h) Draw a labelled diagram of trophozoite of *Giardia intestinalis.*

(i) Name two species of louse that infect man.

(j) Mention the drugs for treatment of Ascariasis and Taeniasis.

(k) Distinguish between tick and mite.

(l) Name the host choice and parasitic behaviour of Vampire bat.

(m) Comment on prophylaxis of *A. duodenale*.

(n) What is Kala-azar? Why is it called so?

(o) What is cutaneous larva migrans?

(p) Name one example of root lesion and one root knot nematode.

(q) What is VSG? Mention its function.

(r) How does biological vector differ from mechanical vector?

(s) What is metacyclic trypomastigote?

(t) Comment on microfilarial periodicity of *Wuchereria bancrofti*.

2. (a) Schematically represent the migration of larval forms of *Ascaris lumbricoides*.

   (b) Distinguish between male and female *Ancylostoma duodenale*. 3+2

3. (a) Comment on pathogenicity and control measures of *Schistosoma haematobium*.

   (b) Describe the life cycle of *Giardia intestinalis*. 2+3

4. (a) Name the vector responsible for Sleeping Sickness.

   (b) What is L-D body?

   (c) Briefly describe the epidemiology and pathogenicity of *Leishmania donovani*. 1+1+(1+2)

5. (a) What is a gall in plants?

   (b) Name two gall forming plant nematodes.

   (c) Describe the structure of *Meloidogyne* sp. 1+2+2

6. (a) Name two diseases transmitted by *Ixodes* sp. and *Cimex* sp.

   (b) Mention the feeding habit of Cookie-Cutter Shark.

   (c) Comment on the changes in growth pattern of host in parasitic infection. 2+2+1

7. (a) What are the diseases transmitted by *Ornithodoros* sp.?

   (b) Discuss the control management of bed bug.

   (c) Mention medical importance of *Pediculus* sp.? 1+2+2

8. (a) Schematically represent the life cycle of *Taenia solium*. What is the infective stage of this parasite?

   (b) Discuss about the prophylactic measures of *Giardia intestinalis*. (2+1)+2

9. Write short notes on (***any two***) : 2½×2

   (a) Sex reversal in Parasitism

   (b) Scolex structure of *Taenia solium*

   (c) Hood Mocking bird

   (d) Parasitoid.

Paper : DSE-A-2

(Biology of Insects)

Full Marks : 50

Answer ***any ten*** questions.

1. Discuss the role of allelochemicals in plant defence. Explain the term 'allelopathy'. 4+1

2. Compare apposition and superposition image formation in insects with suitable diagrams. 2½+2½

3. With suitable diagram differentiate between male and female genital organs in insects. 5

4. Mention the name and role of neurohaemal organs involved in insect metamorphosis. Mention the role of Bursicon in cuticule formation. 3½+1½

5. Enumerate differences between a Carrier and a Vector. Describe the life cycle of Dengue vector with suitable diagrams. 2+3

6. How do you differentiate between Coleopteran and Hymenopteran insects? Write the salient features of Praying Mantis Order. 3+2

7. Write short notes on saltatorial and fossorial appendages in insect with examples. 2½+2½

8. Explain coevolution in terms of insect-plant interaction with suitable example. 5

9. What is trophallaxis? Explain it under the following heads :

(a) offering behaviour of active foragers and

(b) dynamics of food transfer. 1+2+2

10. What do you mean by extra-oral digestion in insects? Name the chemical constituents of insect saliva and write in brief how do they digest different food types. 2+3

11. Mention the function of Juvenile hormone (JH) and Moulting hormone (MH).
Do they work antagonistically? 3+2

12. What are important symptoms of malaria disease? Briefly state the role of climate change in distribution of vector-borne diseases. 2+3

13. Define a pest. What criteria make difference a pest to be major or minor? Explain with examples. 1+4

14. Illustrate the basic structures of tracheal system of cockroach with proper diagram. 5

15. What is a termitarium? Describe the composition of a termite colony mentioning the role played by each group member. 1+4