

2024

**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) What do you mean by biological vector? Cite example.
- (b) Differentiate between ectoparasite and endoparasite.
- (c) What are the behavioural similarities between Vampire bats and Hood Mocking birds with respect to their evolution as parasite (*any two*)?
- (d) How hypnozoites help malarial parasite to survive over host defence system?
- (e) What is measly pork?
- (f) Differentiate between hard tick and soft tick.
- (g) What is parasitoid? Give example.
- (h) Comment on the control measures of *Sarcoptes*.
- (i) What is the parasitic importance of lice?
- (j) What is the scientific name of rat flea? Comment on its pathogenicity.
- (k) Mention a name of blood fluke and its parasitic importance.
- (l) Comment on prophylaxis of *Giardia intestinalis*.
- (m) Distinguish between Kala-azar and PKDL.
- (n) Name the vector and causative agent of sleeping sickness.
- (o) Name one root lesion and one root-knot nematode.
- (p) What are the diseases transmitted by *Ornithodoros* sp.?
- (q) Mention the drugs for treatment of Taeniasis and Filariasis.
- (r) State two differences between Cestoda and Nematoda with example.
- (s) What are the diseases transmitted by flea?
- (t) Discuss the control management of *Cimex* sp.

**Please Turn Over**

**(0631+0670)**

2. (a) Discuss the host parasitic relationship in *Leishmania* sp.  
(b) Write briefly on epidemiology and control of *Trypanosoma gambiense*. 2½+(1+1½)
3. (a) Draw a labelled diagram of amastigote stage of *Leishmania donovani* and comment on its habitat.  
(b) Mention the diagnosis and treatment of *Wuchereria bancrofti*. (2+1)+(1+1)
4. (a) Briefly describe the life cycle of *Taenia Solium*.  
(b) Comment on clinical features and control measures of schistosomiasis. 3+2
5. (a) Comment on the pathogenicity of *Ascaris lumbricoides*.  
(b) Give a brief description on microfilaria larvae and its clinical importance. 2+3
6. (a) Give a brief account of plant nematode interaction with reference to  
(i) invasion of host defence system  
(ii) gall formation.  
(b) Mention the nature of damage caused by them. 3+2
7. (a) Briefly describe the epidemiology and pathogenicity of *Giardia intestinalis*.  
(b) Describe any two features of sleeping sickness disease. (1+2)+2
8. (a) Mention the host species and the parasitic behaviour of Cookie-Cutter Shark on its host.  
(b) State the medical importance of *Sarcoptes* sp. 3+2
9. Write short notes on (any two) : 2½+2½
  - (a) Importance of soft tick
  - (b) Hood Mocking bird
  - (c) *Pediculus* sp.
  - (d) Pathogenicity of *Schistosoma haematobium*.

**Paper : DSE-A-2**  
**(Biology of Insects)**  
**Full Marks : 50**

Answer *any ten* questions.

1. What are Volatile Organic Compounds (VOCs)? State its importance in plant defense against insect attack. 2+3
2. What is ommatidium? Briefly describe the structure of ommatidium with suitable diagram.  $\frac{1}{2}+3+1\frac{1}{2}$
3. Name two major hemipteran insect pests of paddy. Characterize the symptoms of hemipteran attack in paddy. What is hopper burn? 2+2+1
4. Write a short note on different types of haemocytes found in insects with diagram. 5
5. Briefly describe the endocrine regulation of metamorphosis in insects. 5
6. What are three important prerequisites of eusocialism? Explain the sociality in honeybee according to their castes. 2+3
7. Write short notes on raptorial and natatorial appendages of insect with suitable examples.  $2\frac{1}{2}+2\frac{1}{2}$
8. Mention the order of the following insects with at least one important feature :  
 (a) May fly (b) Dragon fly (c) Plant lice (d) Book lice (e) Bird lice. 1×5
9. What is peritrophic membrane? Where it is found? State its function. What will happen if it is damaged or somehow lost? 1+1+1+2
10. What are neurosecretory cells in insects? Mention the function of hormones secreted by corpora allata and prothoracic gland. 1+2+2
11. Draw a schematic structure of stomatogastric nervous system of an insect with proper labelling. What are its functions? 4+1
12. Describe briefly on host recognition and plant acceptance by phytophagous insects. 5
13. In a termite colony (mould) how temperature is regulated? Discuss with special reference to the role of CO<sub>2</sub> in such thermal regulation. 5
14. Name the vector responsible for spreading dengue in humans. With the help of a suitable diagram describe the life cycle of its vector. 1+(1+3)
15. Enumerate differences between Carrier and Vector. Differentiate between Propagative Transmission and Cyclopropagative Transmission with examples. 2+3