

B.Sc. 5th Semester (Honours) Examination, 2024 (CBCS)

Subject : Zoology

Course : DSE-2

(Parasitology)

Time : 2 Hours

Full Marks : 40

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

Group-A

1. Answer any five questions from the following: $2 \times 5 = 10$

- (a) Mention two morphological differences between male and female hookworm.
- (b) What is meant by biological transmission of a parasite?
- (c) Name one blood-dwelling flagellated protozoan parasite. What disease does it cause in man?
- (d) What is Lyme disease?
- (e) Write the scientific name of Vampire bat. Why are they considered as parasites?
- (f) State the difference between obligatory and facultative parasites with examples.
- (g) Write the clinical manifestations of *Taenia saginata* infection in human.
- (h) Why tsetse fly is significant for African population?

Group-B

2. Answer any two questions from the following: $5 \times 2 = 10$

- (a) What is the pathogenic effect of *Giardia intestinalis* in man? Give an outline of life cycle of the parasite with the help of a suitable diagram. $2+3$
- (b) Define parasite. How does it differ from a symbiont? How do parasites adopt to their hosts? $1+2+2$
- (c) What are the various immunological adaptive strategies by blood-dwelling protozoan parasites to avoid mammalian humoral and cell-mediated response? Briefly describe the different developmental forms in the life cycle of *Trypanosoma gambiense*. $2+3$
- (d) Briefly mention the factors influencing the population dynamics of *Sarcoptes* mites. Write the effects of its infestation in human. Add a note on the control measures taken. $1\frac{1}{2}+1\frac{1}{2}+2$

3. Answer *any two* questions from the following:

$10 \times 2 = 20$

- (a) How do *Ascaris lumbricoides* larvae migrate through host tissues? Write control and prevention of *Ascaris lumbricoides* infection. State the difference between male and female *Ascaris lumbricoides*. 3+5+2
- (b) What is the medical importance of *Ornithodoros*? Describe its biology and control measures. 3+5+2
- (c) How do people get infected with *Schistosoma haematobium*? How does *S. haematobium* larvae interact with host's immune cells? Write the prevention and control measures of *S. haematobium* infection. 2+2+6
- (d) Name the causative agent of giardiasis. Draw and describe the various developmental stages of the organism in brief. Comment on the symptoms and the preventive measures of the disease. 1+4+2+3
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B.Sc. 5th Semester (Honours) Examination, 2024 (CBCS)**Subject : Zoology****Paper : DSE-2 (OR)****(Biology of Insects)****Time : 2 Hours****Full Marks : 40***The figures in the margin indicate full marks.**Candidates are required to give their answers in their own words
as far as practicable.***Group-A****1. Answer any five questions from the following: 2x5=10**

- (a) Define 'Metamorphosis' with example.
- (b) How do you identify an insect?
- (c) What is vector? Give example.
- (d) What do you mean by elytra?
- (e) What do you mean by 'Trophallaxis'?
- (f) Which hormones are secreted from the endocrine system of insects?
- (g) Name the amino acid responsible for flight and sclerotization of cuticle.
- (h) What is cooperative brood care? Give an example.

Group-B**2. Answer any two questions from the following: 5x2=10**

- (a) State different types of legs found in insects and how they are adapted to live in diverse habitat. 2+3
- (b) Explain different types of photoreceptors with their structure. 3+2
- (c) High doses of β -ecdysone undergo abnormal molting cause death of insects— Discuss. What is Weismann ring? 3+2
- (d) Differentiate between Mechanical and Biological vectors. Add a short note on 'Integumentary system' of insect. 2+3

Group-C

3. Answer *any two* questions from the following:

$10 \times 2 = 20$

- (a) Name the causative agents of malignant malaria. Describe the role of mosquito as vector.
What is eusocialism? 1+7+2
- (b) Classify the class insects upto order. Write a short note on 'Success of Insects on the Earth'. 7+3
- (c) What is theory of coevolution? Distinguish between prognathous and opisthognathous heads of insects. Name two insects that have the most primitive and generalized mouth parts. Name two cryoprotectant found in insects. 3+3+2+2
- (d) What are 'allelochemicals'? Write down the role of 'allelochemicals' in host-plant mediation. What is 'Phytophagous insect'? How does 'Phytophagous insects' select host plant? 2+3+1+4
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