M.Sc 3rd Semester Examination, 2019

ZOOLOGY

PAPER – ZOO-301

Full Marks : 40

Time : 2 hours

Answer **all** questions

The figures in the right hand margin indicate marks

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

Illustrate the answers wherever necessary

GROUP–A

(*Basic and Applied Entomology*)

1. Answer any *two* of the following : 2 × 2

   (*a*) With labelled diagram point out the sutures on the insect head.

(*b*) Mention several utilities in studying of aquatic insects.

(*c*) Briefly highlight the concept of IPM.

(*d*) Add a note on the significances of bioluminescence.

2. Answer any *two* of the following : 4 × 2

(*a*) Briefly explain the evolutionary significance for the modification for insects wings.

(*b*) Give a comparative account of different apterygot insect orders.

(*c*) Schematically represent different insects orders having pest importances.

(*d*) "Insects-Plants' interactions an example for co-evolution"—Justify the statement.

3. Answer *one* question of the following : 8 × 1

(*a*) Define neuro-endocrine system. Mention different components of this system in insects. Briefly discuss the neuro-endocrine integration in moulting process for insects. 1 + 3 + 4

(*b*) (*i*) Mention different groups of insects inhabiting in aquatic environment.

(*ii*) Highlight different modes of adaptabilities of insects for leading aquatic mode of life.

(*iii*) Add a note on different types of galls-formed by insects-plants interaction.

2 + 4 + 2

GROUP–B

(*Ecotoxicology*)

4. Answer any *two* of the following : 2 × 2

(*a*) Why Ecotoxical studies is Bioimportant ?

(*b*) Write a note on Chelation therapy.

(*c*) Discuss the impact of aquatic toxicology in bio-diversity management.

(*d*) What are the Carcinogenic toxin ?

5. Answer any *two* of the following : 4×2

(*a*) Xenobionts and DNA damage-state the possible impact.

(*b*) What is biomagnification ? Ilaborate it with a suitable example.

(*c*) State the difference between LC50 and LD50.

(*d*) Classify the toxic components of environmental matters having specific impact organisms.

6. Answer any *one* question of the following : 8×1

(*a*) Classify Xenobionts with example based on physical, chemical and physiological nature.

(*b*) Find out the LC50 value for the data given below with suitable illustrative comment on your findings

Number of test animal – 20

Toxicity assessment for 24 hours and 48 hours.

Pesticides used – metacid 50

(*Continued*)

Concentration (Mg)	Mortality (24 hr)	Mortality (48 hrs.)
0.1	00	02
0·2	00	03
0·3	01	06
0·4	03	09
0·5	05	11
0·6	07	15
0·7	09	18
0·8	11	19
0·9	14	20
1·0	16	20