PG/IIIS/ZOO-301/18

M.Sc. 3rd Semester Examination, 2018

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

(*Entomology*)

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

   (*a*) Enlist major insects groups inhabiting in aquatic environment.

(*b*) Point out the merits and demerits of biological control.

(*c*) What are the attributes which have made insects as the most successful faunal groups in the animal kingdom.

(*d*) Distinguish between pheromones and allelochemicals.

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

(*a*) Why midgut of insects is considered as the most sensitive part of insects digestive system. 4

(*b*) Schematically highlight the mechanism of bioluminescence in insects. 4

(*c*) With a labelled diagram point out the different components of insects integument. 4

(*d*) State the merits of IPM. Enumerate the tools of IPM. 2 + 2

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

(*a*) Draw the relationship between moulting and

metamorphosis in insects. Highlight the roles neuroendocrine system in the moulting process. 8

(*b*) (*i*) 'Insects'-plants interactions is an example of co-evolution"—Justify.

(*ii*) Explain the plausible mechanism of gall formation by insect. Mention the significance of gall. 4 + 2 + 2

GROUP – B

(*Ecotoxicology*)

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

(*a*) Define xenobiotics with suitable examples.

(*b*) State about corrosive pollutants and its effects.

(*c*) What is chelation therapy ?

(*d*) Write on Enzymes actions involved in xenobiotic metabolism.

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

(*a*) How do you classify toxic components of environment with suitable examples.

(*b*) How zenobionts enters into our body ? State the possible route of entry and subsequent damages.

(*c*) Explain biomagnification in any food chain (Aquatic / Terrestrial) with suitable presentation of data.

(*d*) State on the Zenobionts and DND damage and its possible impacts.

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

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

(*b*) Find out the LC50 value for the data given below with suitable illustrations. When,

Number of test animals are -20
Toxicity proassay for 24 and 48 hrs.

Pesticides used-Metacid 50 :

Concentration of metacid 50 (mg)	Mortality of test animal (24 hrs.)	Mortality of test animals (48 hrs.)
0·1	00	02
0·2	00	06
0·3	00	08
0·4	02	12
0·5	04	14
0·6	08	16
0·7	10	17
0·8	12	18
0·9	14	19
1·0	16	20

Comment on your findings. How does it change with dose and duration of exposure ?