

M.Sc. 3rd Semester Examination, 2022

ZOOLOGY

(Basic and Applied Entomology / Ecotoxicology)

PAPER — ZOO-301.1 & 301.2(Day)

Full Marks : 40

Time : 2 hours

The figures in the right hand margin indicate marks

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

PAPER - ZOO-301.1

(Basic and Applied Entomology)

[Marks : 20]

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

(a) Why insects are considered the most successful group of animals of the world ?

- (b) With a labelled diagram mention different parts of insects wing.
- (c) With a labelled diagram point out different sutures of insects head.
- (d) Mention the functional contribution of insects towards human benefit and environmental sustainability.

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

- (a) Give a comparative account of different apterygota insects orders. 4
- (b) Why midgut of insects is considered as the most sensitive part of insects digestive system ? 4
- (c) What do you mean by Integrated Pest Management ? Give the names of biological agents that controls Jute Pest. $2 + 2$
- (d) What is filter chamber ? State its function. $1 + 3$

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

- (a) Enlist different aquatic insects categorising primary and secondary invaders to the aquatic systems. Briefly explain the roles of aquatic insects in environmental monitoring. 3 + 5

What are the constituents of neuro-endocrine stem of insects? Briefly discuss the neuroendocrine integration for moulting and ecdysis. 2 + 6

...PER - ZOO-301.2

(Ecotoxicology)

[Marks : 20]

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

- (a) What do you mean by biotransformation? Cite an example. 1 + 1

- (b) What is aquatic toxicology? 2

(c) What is toxemia ?

2

(d) Define environmental genotoxicity.

2

5. Answer any *two* questions of the following

(a) Give a brief account of different immunotoxic adverse effects.

(b) Differentiate between toxin and poison.

(c) What is "Neurotoxic pollutant"? Mention types and respective mechanisms.

(d) Briefly define chelating agents. Comment on the effect of chelating agents on the efficiency of mutagenic agents.

2 + 2

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

(a) What is a corrosive pollutant? Give a brief account of corrosive agents. $2 + 6$

(b) Find out the LC_{50} value from the data given below with suitable illustration. $6 + 2$