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M.Sc. RNLK-/Zoology/301/22

2021

Zoology

[Third Semester]

Paper - 301

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.*

*Illustrate the answers wherever necessary.*

**Group - A**

**Entomology**

1. Answer any two of the following : 2×2=4
- a) What is JH? Write its one application in pest management. 1+1
- b) State the difference between Luciferin and Luciferase. 2
- c) State the chemical nature and empirical formula of chitin. 1+1

*(Turn Over)*

( 2 )

d) What is semiochem?

2. Answer any two of the following :  $4 \times 2 = 8$

a) Write a short note on 'Biodiversity of insects'?

b) Mention the significance of midgut in insects.

c) What is pheromones? Write the significance of 'nail marking pheromones.  $1+3$

d) Write down the modifications of Endocuticle and Exocuticle.

3. Answer any one of the following :  $8 \times 1 = 8$

a) Write down the respiratory modifications of aquatic insects.

b) What is IPM? Write down its ecological significance. Write down the nature of damage and control measures of any Jute pest.  $2+2+2+2$

( 3 )

**Group - B**

**Ecotoxicology**

4. Answer any two of the following : 2×2=4
- a) State the difference between toxicology and ecotoxicology. 2
  - b) What is MATC? 2
  - c) Normal salt may be toxic – justify this statement. 2
  - d) Name one neurotoxic xenobiotics. 2
5. Answer any two of the following : 4×2
- a) What is immunosuppression? Mention all possible causes of immunosuppression. 1+3
  - b) Write down the route of entry and subsequent damage of xenobiotics. 4
  - c) State the difference between  $LC_{50}$  and  $LD_{50}$ . 4
  - d) Explain bioamplification of a highly persistence chemicals in an aquatic ecosystems. 4

( 4 )

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

a) State the role of Phase I and Phase II reactions in detoxification of xenobiotics. 8

b) What is hypersensitivity? Give example. Which parameters should be considered for hypersensitivity and mention how hypersensitivity could be prevented?

2+1+3+2