(20123)

Roll No. ..03.....

M. Sc.-I Sem.

11070

M. Sc. Examination, Dec. 2022 ZOOLOGY-I

Economic Zoology and Taxonomy (H-1062)

Time: Three Hours]

[Maximum Marks: 50

Note: Attempt questions from all Sections as per instructions.

Section-A

(Very Short Answer Type Questions)

Attempt all the *five* questions. Each question carries 2 marks. Very short answer is required not exceeding 100 words. $2 \times 5 = 10$

- 1. What is beta taxonomy?
- 2. Give the concept of species.
- Give the scientific names of two species of honeybee.
- 4. What is ising glass as by product of fishing industry?
- 5. Define numerical taxonomy.

(Short Answer Type Questions)

Attempt any *two* questions out of the following three questions. Each question carries 5 marks. Short answer is required not exceeding 200 words. $5\times2=10$

6. Elaborate the role of 'Karyotype' in cytotaxonomy.

- Describe the various sub-categories of species.
- Give an account of biological control of pests.

Section-C

(Detailed Answer Type Questions)

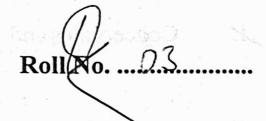
Attempt any *three* questions out of the following five questions. Each question carries 10 marks.

Answer is required in detail. $10 \times 3 = 30$

- Elaborate the development of taxonomic key for animal classification.
 - 10. Give an idea of molecular taxonomy. Why is it more precised than others?
 - 11. Write an essay on the history of Taxonomy.
 - Describe the various steps in poultry farming in India.

What is Integrated Pest Management (IPM)?
How can it be useful in overcoming food shortage
at global level?

A (20123) M. Sc.-I Sem.



11071

M. Sc. Examination, Dec. 2022 ZOOLOGY-II

Evolutionary Biology

(H-1063)

Time: Three Hours]

[Maximum Marks: 5.0

Note: Attempt questions from all Sections as per instructions.

Section-A

(Very Short Answer Type Questions)

Attempt all the *five* questions. Each question carries 2 marks. Very short answer is required not exceeding 75 words. $2\times5=10$

- 1. Coacervates and microspheres.
- 2. Bipolar distribution.
- 3. Gene duplication.
 - A. Coevolution.
 - 5. Atavism.

(Short Answer Type Questions)

Attempt any *two* questions out of the following three questions. Each question carries 5 marks. Short answer is required not exceeding 200 words. $5\times2=10$

8. Abiogenesis and Biogenesis.

- 7. Discontinuous animal distribution.
- 8. Mass extinction and periodic extinction.

Section-C

(Detailed Answer Type Questions)

Attempt any *three* questions out of the following five questions. Each question carries 10 marks.

Answer is required in detail. $10 \times 3 = 30$

- 9. Give an account of theories of origin of life on earth.
 - 10. Give an account of distribution of animals with time.
 - 11. What is micro-evolution and macro-evolution?

 Discuss.

- 22. Describe speciation. How does it occur?
- Describe the various evidences that support organic evolution.

A (20123) M. Sc.-I Sem.

Roll No. 03

11072

M. Sc. Examination, Dec. 2022

ZOOLOGY-III

Non-Chordata

(H-1064)

Time: Three Hours] [Maximum Marks: 50

Note: Attempt questions from all Sections as per instructions.

Section-A

(Very Short Answer Type Questions)

Attempt all the *five* questions. Each question carries 2 marks. Very short answer is required not exceeding 75 words. $2\times5=10$

- (1.) Caudal tuft.
- (2.) Choanocyte.
- BEROE. ***
- Nephridial forest. 400
- S. Radula. rope

(Short Answer Type Questions)

Attempt any *two* questions out of the following three questions. Each question carries 5 marks. Short answer is required not exceeding 200 words. $5\times2=10$

Nutrition in Amoeba.



Obelia medusa.

8. Regeneration in Echinodermata.

Section-C

(Detailed Answer Type Questions)

Attempt any *three* questions out of the following five questions. Each question carries 10 marks.

Answer is required in detail. $10 \times 3 = 30$

- Give the salient features of Phylum Porifera and classified Porifera upto orders with suitable example.
- What is canal system? Describe the canal system of Sycon in detail.

Describe the life history of Taenia solium.

Heraienh Oystecem Onchosphem

Explain excretory system and process of excretion in Earthwarm.

13. Give a detailed account of general organization and affinities of Hemichordata.

A (20123) M. Sc.-I Sem.

11073

M. Sc. Examination, Dec. 2022 ZOOLOGY-IV

Cell & Molecular Biology (H-1065)

Time: Three Hours] [Maximum Marks: 50

Note: Attempt questions from all Sections as per instructions.

Section-A

(Very Short Answer Type Questions)

Attempt any *five* questions out of the following six questions. Each question carries 2 marks. Very short answer is required. $2\times5=10$

- ∠ Cell cycle.
- 2. Germplasm theory.
- 3. Cadherins.
- 4. Nucleosome.
- 5. Actin filaments.
- 6.. Active transport.

(Short Answer Type Questions)

Attempt any *two* questions out of the following three questions. Each question carries 5 marks. Short answer is required. $5\times2=10$

7. How mitochondria act as powerhouse of cell'?

Describe its structure and functions.

- S. Describe the fluid mosaic model of plasma membrane.
- 9. Discuss the process of DNA replication.

Section-C

(Detailed Answer Type Questions)

Attempt any *three* questions out of the following five questions. Each question carries 10 marks.

Answer is required in detail. 10×3=30

- 10. Describe the structure of cytoskeleton. How its components are involved in cell movement?
- What do you understand by cell-cell signaling?
 How signaling is possible from plasma membrane
 to nucleus?

- 42. What is apoptosis? Describe its mechanism in detail.
- 13. Describe cellular affinity and cell adhesion. Give a detailed account on calcium dependent and calcium independent cell-cell adhesion.
- 14. How does protein synthesis occur in cell through the process of transcription and translation?