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(21223)

Roll No. .....

M.Sc.- Ist Sem.

11070

M.Sc. Examination, December -2023

ZOOLOGY-I

Economic Zoology and Taxonomy

(H-1062)

Time : Three hours] *[Maximum Marks : 50*

Note: Attempt **all** the sections as per instructions.

Section-A

(Very Short Answer Questions)

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

1. Define cladogram. 2

2. Give the concept of binomial nomenclature. 2

3. Differentiate between systematics and taxonomy. 2

4. Name any two insect pests of sugarcane. 2

5. Name any two enemies of leather industry. 2

Section-B

(Short Answer Questions)

Note: Attempt any **two** questions out of the following three questions. Each question carries 5 marks. Short answer is required not exceeding 200 words. 2×5=10

6. Write a brief note on animal taxonomy. 5

7. Give a brief idea of taxonomical hierarchy. 5

8. Describe the role of honey bee in pollination. 5

Section-C

(Long Answer Questions)

Note: Attempt any **three** questions out of the following five questions. Each question carries 10 marks. Answer is required in detail. 3×10=30

9. Give the objectives and importance of taxonomy. 10

10. Describe ethological approach in taxonomy. 10

11. Describe the mode of infection, symptoms and control of Muscardine disease in silkworm. 10

12. Explain the process of skin to form good quality of leather. 10

13. Explain the nomenclature code in detail. 10

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(21223) Roll No. .....

M.Sc. - I Sem.

11071

M.Sc. Examination, December-2023

ZOOLOGY-II

Evolutionary Biology

(H-1063)

Time : Three Hours] *[Maximum Marks : 50*

Note : Attempt questions from **all** sections as per instructions.

Section–A

(Very Short Answer Questions)

Note : Answer all the **five** questions. Each question carries 2 marks. Very Short answer is required not exceeding 75 words. 5×2=10

1. Protocells
2. Wallace line
3. Molecular clocks
4. Colouration and mimicry
5. Stages of Human evolution

Section–B

(Short Answer Questions)

Note : Attempt any **two** questions out of the following three questions. Each question carries 5 marks. Short answer is required not exceeding 200 words. 2×5=10

6. Characterize Mesozoic Era.
7. Concept of Neutral Evolution.
8. What is directional selection? Explain with help of an example.

Section–C

(Detailed Answer Questions)

Note : Attempt any **three** questions out of the following five questions. Each question carries 10 marks. Answer is required in detail. 3×10=30

9. Discuss various theories of organic evolution.
10. Describe various means and barriers of dispersal.
11. What is molecular evolution? Describe its various modes.
12. Give an account of isolating mechanisms and their role in speciation.
13. Discuss the origin and evolution of Horse.

11072

M.Sc. Examination, December-2023

ZOOLOGY-III

Non-Chordata

(G-1064)

Time : Three Hours] *[Maximum Marks : 50*

Note : Attempt questions from **all** sections as per instructions.

Section–A

(Very Short Answer Questions)

Note : Attempt all the **five** questions. Each question carries 2 marks. Very short answer is required not exceeding 75 words. 5×2=10

1. Endomixis
2. Cnidoblast
3. Miracedium
4. Megalopa
5. Madriporite

Section–B

(Short Answer Questions)

Note : Attempt any **two** questions out of the following three. Each question carries 5 marks. Short answer is required. [limit 200 words]. $2\times5=10$

6. Gemmules
7. Larval forms in fasciola hepatica
8. Affinities of onychophora

Section–C

(Detailed Answer Questions)

Note : Attempt any **three** questions out of the following five questions. Each question carries 10 marks. Answer is required in detail. $3\times10=30$

9. Explain the process of Conjugation in Paramecium with suitable example.
10. What do you mean by metagenesis? Explain it in case of Obelia.
11. What is sexual dimorphism? Differentiate male and female Ascaris in brief and explain their life history.
12. Classify Phylum Annelida upto orders with general features and example.
13. Explain the process of respiration in Arthropoda.

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Roll No. .....

M.Sc.–I Sem.

11073

M.Sc. Examination, Dec.–2023

ZOOLOGY-IV

Cell & Molecular Biology

(H-1065)

Time : 3 Hours] *[Maximum Marks : 50*

Note: Attempt questions from **all** Sections as per instructions.

Section–A

(Very Short Answer Type Questions)

Note : Attempt any ***five*** parts of the following question. Each part carries 2 marks. Very short answer is required. 5×2=10

1. (a) Lysosomes

   (b) Uniports

   (c) Lampbrush Chromosomes

   (d) Microfilaments

   (e) Okazaki fragments

   (f) RER and SER

Section–B

(Short Answer Type Questions)

Note: Attempt any ***two*** questions out of the following three questions. Each question carries 5 marks. Short answer is required. $2 \times 5 = 10$

2. Write a short note on surface receptors and their functions.

3. Describe the causes of cancer

4. Describe the structure and functions of mitochondria.

Section–C

(Detailed Answer Type Questions)

Note: Attempt any ***three*** questions out of the following five questions. Each question carries 10 marks. Answer is required in detail. $3 \times 10 = 30$

5. What are the different models proposed for plasma membrane. Elaborate the current model emphasizing its edge over the previous models.

6. Explain the mechanism of apoptosis and its significance.

7. What is cell-cell signalling? How signalling is possible from plasma membrane to nucleus (Signal transduction).

8. What do you understand by competence and secondary induction? What is their role in development.

9. How does protein synthesis occur in cell through the process of transcription and transduction?