



UNIVERSITY OF NORTH BENGAL
B.Sc. Honours 6th Semester Examination, 2021

DSE4-ZOOLOGY

Full Marks: 40

ASSIGNMENT

The figures in the margin indicate full marks.

The question paper contains three parts: GROUP-A, GROUP-B and GROUP-C
The candidates are required to answer any *one* from *three* groups.
Candidates should mention it clearly on the Answer Book.

GROUP-A

ANIMAL BIOTECHNOLOGY

Answer any *four* questions from the following

10×4 = 40

1. Describe outline strategy of constructing a genomic library.
2. Describe the use of RFLP and Southern blotting in forensic sciences.
3. Discuss the different stages involved in Polymerase Chain Reaction (PCR) cycle with a note on the applications of PCR.
4. Write about Sanger method of DNA sequencing.
5. Discuss Nuclear Transplantation method in the Production of transgenic animals.
6. With a suitable diagram define and describe features utilities of a suitable expression vector.
7. Discuss how the primary and secondary animal cell cultures are established with a note on cell line.
8. Discuss on Applications of transgenic animals in Production of pharmaceuticals citing a suitable example.

GROUP-B

FISH AND FISHERIES

Answer any *four* questions from the following

10×4 = 40

1. Classify fish up to Subclass with characters citing at least two examples (preferably Indian) in each.

2. Describe different types of scales and their use in Classification and determination of age in fishes.
3. Describe various types of Swim Bladder and their role in respiration with appropriate diagrams.
4. Describe impact of climate change in the fish productivity of Bay of Bengal.
5. Explain how microinjection and liposome mediated gene transfer technique can be used for the production of transgenic fish with a note on the benefits of transgenic fish.
6. Describe induced breeding of fishes and Seed production in carps.
7. Describe briefly about Bacterial, viral and parasitic fish diseases adding a note on the preventive measures.
8. Describe the osmoregulatory mechanisms of Elasmobranchs.

GROUP-C
BIOLOGY OF INSECTS

Answer any *four* questions from the following

10×4 = 40

1. Classify Class Insecta up to order according to the scheme of classification adapted by Brusca and Brusca, 2016, with at least two examples.
2. Define scotopic and photopic eyes and describe the fundamental structure of compound eyes.
3. Write a detail account of metamorphosis in insects with suitable examples.
4. Describe the modifications of mouth parts present in piercing-sucking insects.
5. Defining trophallaxis, describe the social organization of termites and the division of labor among the different caste members of the colony.
6. Discuss on a major insect pest of paddy with reference life cycle, damage caused and prevention studied by you.
7. Describe the endocrine system and hormones in insect.
8. Describe the structure and physiology of respiratory mechanism of insect.

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