

2025

5th Semester Examination (CCFUP : NEP)

ZOOLOGY

Paper : MDSE 1-T
(Single Core Major Elective-1)



Full Marks : 40

Time : Two Hours

*The figures in the margin indicate full marks.
Candidates are required to give their answers
in their own words as far as practicable.*

[Fish and Fisheries]

Group - A

Answer any *five* questions : $2 \times 5 = 10$

1. Name the different types of scales present in fishes.
2. Write the scientific names of one bony fish and one cartilaginous fish.
3. What do you mean by a transgenic fish? Give one example.
4. What are anadromous and catadromous fish?
5. Mention two functions of fins in fishes.
6. Name two Indian air-breathing fish.

P.T.O.

(2)

7. What is bioluminescence?
8. What is aquaponics?

Group - B

Answer any *four* questions : 5×4=20

9. Classify fishes up to sub-class level and mention the diagnostic characters with suitable examples. 3+2
10. Explain the structure of fish gills and describe their role in respiration and osmoregulation. 3+2
11. Describe the structure and function of electric organ in fishes. 4+1
12. Explain the role of water quality management in fish disease management.
13. Describe preservation and processing of fish.
14. Write a short note on fishery by-products.

Group - C

Answer any *one* question : 10×1=10

15. Describe Extensive, Semi-intensive and Intensive aquaculture and make a comparative analysis of its succession. Define polyculture with an example. 8+2
16. Explain transgenic fish and their importance in research. 7+3



(3)

OR
[Toxicology]

Group - A

Answer any *five* questions : 2×5=10

1. What are xenobiotics ? Mention one example related to human exposure. 1+1
2. What is meant by mode of action of a toxic agent?
3. Define LD₅₀ and state its significance.
4. Distinguish between acute and chronic toxicity.
5. What do you mean by bioaccumulation?
6. What is an antidote? Name one universal antidote.
7. Define pesticides. Give two examples of organochlorine pesticides.
8. What are persistent pollutants? Name any two persistent organic pollutants (POP)
9. Explain the processes of absorption and distribution of xenobiotics in the human body. How do these influence toxicity? 3+2

Group - B

Answer any *four* questions : 5×4=20

P.T.O.



(4)

10. Describe the phases of biotransformation of xenobiotics. Why is biotransformation sometimes harmful instead of protective? $2\frac{1}{2}+2\frac{1}{2}$
11. Discuss the general principles of heavy metal toxicity. Why do heavy metals tend to accumulate in biological systems? $2+3$
12. Describe the major sources of exposure and toxic manifestations of lead or chromium. $2+3$
13. Define ecotoxicology and explain its scope and importance. $2+3$
14. Explain the preventive measures used in occupational toxicology.

Group - C

Answer any *one* question : $10 \times 1 = 10$

15. Discuss the classification of poisons and toxicants based on their source and mode of action. Explain how understanding the mechanism of action helps in prevention and treatment of toxicity. $2+2+6$
 16. Define LD_{50} and LC_{50} . Explain their significance in toxicity evaluation. Explain the mode of action of organophosphate pesticides. $3+3+4$
-