

Total No. of Printed Pages—3

6 SEM TDC DSE ZOO (CBCS) 2 (H)

2 0 2 4

(May)

ZOOLOGY

(Discipline Specific Elective)

Paper : DSE-2

(Fish and Fisheries)

(For Honours)

Full Marks : 53

Pass Marks : 21

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

1. Fill in the blanks : 1×5=5

(a) Fin rot is caused by ____.

(b) Cast net is a common fishing ____.

**(c) ____ is a sensory system in fishes
used to detect vibration and movement
in water.**

(2)

- (d) Skeletons of Chondrichthyes are primarily composed of ____.
- (e) ____ are the prime organs of swimming in fishes.
2. Write the use of scales in classification and determination of age of fish. 5
3. Write short notes on any *three* of the following : 3×3=9
- (a) Bioluminescence
- (b) Parental care in fish
- (c) Swim bladder
- (d) Composite fish culture
4. Why do fishes migrate? Write briefly about the types of fish migration. 2+5=7
5. What are fishery by-products? Give a note on different fishery by-products. 2+5=7
6. What is pisciculture? Write about the application of remote sensing and GIS in fisheries. 2+8=10

Or

Distinguish between pen and cage culture. Write the role of water quality parameters in aquaculture. 10

(3)

7. What is sustainable aquaculture? Write about extensive and intensive aquaculture. 2+4+4=10

Or

Why is Zebrafish used as model organism in research? Add a brief note on preparation and maintenance of fish aquarium. 10

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6 SEM TDC DSE ZOO (CBCS) 3 (H)

2 0 2 4

(May)

ZOOLOGY

(Discipline Specific Elective)

(For Honours)

Paper : DSE-3

(Immunology)

Full Marks : 53

Pass Marks : 21

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

1. Fill in the blanks :

1×5=5

- (a) The primary lymphoid organs involved in immune cell maturation are ____ and ____.
- (b) The process by which antibodies bind to pathogens, marking them for destruction, is called ____.

(2)

- (c) The specific region on an antigen where an antibody binds is known as ____.
- (d) Immunoglobulin responsible for mucosal immunity is ____.
- (e) The major histocompatibility complex (MHC) plays a crucial role in ____.
2. Write short notes on (any three) : $4 \times 3 = 12$
- (a) Epitopes
- (b) Cytokines
- (c) Rheumatoid arthritis
- (d) Clonal selection theory
3. Distinguish between (any three) : $4 \times 3 = 12$
- (a) Active immunity and Passive immunity
- (b) Adjuvants and Haptens
- (c) Antigenicity and Immunogenicity
- (d) Autoimmunity and Immunodeficiency
4. What is RIA? Describe the principle of RIA. Briefly describe the technique of RIA with suitable illustrations. $2+4+6=12$

(3)

Or

Describe the structure of MHC molecule with appropriate illustrations. Explain the different classes of MHC molecules and mention their functions. $6+2+4=12$

5. Describe the endogenous and exogenous pathways of antigen processing and presentation with appropriate illustrations. Highlight the differences between these two pathways in terms of the cellular mechanisms and antigen-presenting cells involved. $5+5+2=12$

Or

What is hybridoma technology? Describe the process involved in generating monoclonal antibodies by hybridoma technology. List the biomedical applications of monoclonal antibodies. $2+8+2=12$
