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B.F.Sc./3rd Sem/25

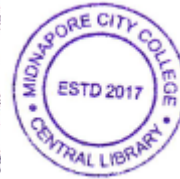
2025

3rd Semester Examination

4-Years B.F.Sc.

Paper : BFSC-301

(Fish Immunology)



Full Marks : 50

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.*

Group - A

1. Answer any *ten* questions : $2 \times 10 = 20$

(a) What is innate immunity? Give an example in fishes.

(b) Explain cell-mediated and humoral immunity in fish with example.

(c) Which hormone is called stress hormone? Write on alarming phase.

(d) What are immunoglobulins? Name two classes found in fishes.

(e) Explain the principle of a precipitin reaction.

(f) Differentiate between pathogenicity and virulence with suitable example.

P.T.O.



- (g) What is helper T cells?
- (h) Mention the functions of granulocytes in fish.
- (i) Name four lymphoid organs in fish.
- (j) Write short note on epitope and paratope.
- (k) Write two benefits of using immunoassays in disease surveillance.
- (l) What are antigenic determinants? Give one example.
- (m) State two reasons for using multivalent subunit vaccines in fish.
- (n) Name two cells and organs in fish have role in immune system.
- (o) Explain the role of complement proteins in fish immunity.

Group - B

2. Answer any **six** questions : 5×6=30

- (a) Write in detail about the components of cell-mediated immunity with their function.
- (b) Compare B cells and T cells in terms of structure, function, and immune response.
- (c) How macrophage are formed? Write its importance in defense system in fish.



(3)

(d) Write about the principle behind vaccine preparation. Write about its types with explanation and example. 2+3

(e) Briefly describe antimicrobial peptides (AMPs) and enzymes as innate immune factors.

(f) What are non-specific cytotoxic cells (NCCs)? Mention their roles in fish defence. 2+3

(g) Write on serological methods in disease diagnosis of fish.

(h) Describe the significance of tissue barriers in fish immunity.

(i) Write a short note on ELISA technique.

(j) Write note on immunostimulant and its mechanism of action. 2+3
