

2023

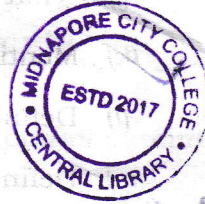
**BFSC 3rd Semester Examination**

**Fish Immunology**

PAPER — BFSC-301

Full Marks : 50

Time : 2 hours



The figures in the right-hand margin indicate marks.

Candidates are required to give their answers  
in their own words as far as practicable.

Illustrate the answers wherever necessary.

1. Answer any **ten** from the following questions :  
2×10=20

(a) Define Hapten. (2)

(b) What is paratope? (2)

(c) All immunogens are antigen but all antigens  
are not immunogen. Justify.

(d) Name the primary lymphoid organ in fish. (2)

(e) Differentiate between active immunity and  
passive immunity. (2)

/871

(Turn Over)

( 2 )

- (f) What is MMCP?
- (g) Mention the role of IgM.
- (h) What is humoral immune system?
- (i) What is Precipitin?
- (j) What are affinity and avidity?
- (k) Mention any two functions of antibody.
- (l) Define recombinant DNA vaccine.
- (m) Define immunostimulants.
- (n) What is immunofluorescence?
- (o) State the functions of  $T_C$  and  $T_H$  cell.

2. Answer any six from the following questions :

5×6=30

- (a) Write a note on ELISA technique.
- (b) Mention the principle and application of RIA.
- (c) State the sources and portals of disease producing organisms.
- (d) Give the structure of MHC I and MHC II and mention their functions.
- (e) What is zone phenomenon? Comment on Coombs test.

(Continued)

( 3 )

- (f) Mention different modes of vaccine administration along with their advantages and disadvantages.
- (g) Elaborate different types of stressor.
- (h) Briefly explain first line of defence in finfishes.
- (i) Elaborate the structure of Ig with suitable diagram.
- (j) Give an elaborative classification of vaccine used in fish.

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