

2008**M.Sc.****3rd Semester Examination****AQUACULTURE MANAGEMENT & TECHNOLOGY****PAPER—AMT-3004****Full Marks : 40****Time : 2 Hours**

The figures in the right-hand margin indicate full marks.

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

Illustrate the answers wherever necessary.

(Immunology, Vaccination and Diagnostic Equipments)

Answer Q. No. 1 and any three from the rest.

1. Write in brief (any five) : 2×5
- a) Mention two commercially available immunostimulant component used in shrimp farming in West Bengal.
 - b) What is the role of zeolite in a fish pond?
 - c) Biological properties of IgG molecule.
 - d) What is haptens and adjuvants?
 - e) What is sanitizer? Mention two commercially available sanitizers used in fish pond of West Bengal.
 - f) Give the names of two commercially available fish vaccine.
 - g) Mention two natural antiviral carbohydrate molecule used for aquaculture application.
 - h) Name one commercially available vitamin and one mineral mixture compound used in Aquaculture.

(Turn Over)

2. a) What do you mean by commercial aquaculture medicine ?
 b) Enlist different commercial aquaculture medicine used for shrimp disease control in West Bengal.
 c) Add a note on aquaculture drug regulations in India.
 2+4+4
3. Write a brief account on any *two* of the following : 5×2
 a) Principle and Application of PCR in Aquaculture.
 b) Fish disease and human health.
 c) Protective barrier of fish against infection.
 d) Principle and application of Electrophoresis.
4. a) What do you mean by Live-attenuated vaccines ?
 b) Briefly describe the advantages and disadvantages of killed vaccines.
 c) Add a note on recombinant protein vaccine for fish parasitic disease control.
 3+3+4
5. a) Define probiotics.
 b) Enlist some Gram-positive and Gram-negative probiotics used in aquaculture.
 c) Add a note on mode of action of gut probiotics in fish.
 2+4+4
6. a) What is epitope and paratope ?
 b) Describe the structure of IgG with suitable illustration.
 c) What are the criteria of an immunogenic compounds.
 d) Add a note on Antigen-antibody interaction through crosslinking.

2+4+1 $\frac{1}{2}$ + 2 $\frac{1}{2}$