

2009

**AQUACULTURE MANAGEMENT AND
TECHNOLOGY**

(Immunology, Vaccination and Diagnostic Equipments)

PAPER—AMT - 3004

Full Marks : 40

Time : 2 hours

Answer **all** questions

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. Write in brief (any *four*) : 2 × 4
- (a) What do you mean by phago-cytosis ?
 - (b) Function of thymus gland ?
 - (c) Mention the composition and function of Oximore.

(Turn Over)

(d) Write the name of water and soil probiotics (two each) commercially used in West Bengal for shrimp farming.

(e) Why haematopoietic cells are considered multipotent?

(f) Mention two products names of zeolite commercially available and used for aquaculture.

(g) What is the full form of LSP? Mention its uses in aquaculture.

(h) Mention the difference between SEM and TEM.

2. Answer any *four* of the following : 4 × 4

(a) Application of Feed probiotics in aquaculture.

(b) Discuss the techniques of paper chromatography and its application.

(c) State the general principle and mode of application of fish vaccination.

- (d) Describe the chemical structure of IgG with suitable illustration.
- (e) Discuss in brief the PCR technology used for fish disease identification.
- (f) Briefly discuss the biological property and function of IgA molecule.
- (g) What do you mean by Sanitizer? Mention 6 Sanitizers used in West Bengal. State the composition of any two Sanitizer.
- (h) Discuss the aquaculture drug regulation in Indian context.

3. Answer any *two* of the following :

8 × 2

- (a) (i) What do you mean by Immunostimulant ?
- (ii) Enlist the immunostimulant commercially available for shrimp farming.
- (iii) Add a note on use of medicinal plant extracts as immunostimulant in finfish aquaculture.

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- (b) (i) Distinguish between Immunogen and Hapten.
- (ii) Define Adjuvents with example.
- (iii) Add a note on requirements of immunogenicity. 2 + 2 + 4
- (c) (i) Write down the principles and uses of Electrophoresis.
- (ii) Add a note on principle and uses of ELISA test in Aquaculture. 4 + 4
- (d) (i) Discuss in brief the fish disease in relation to human health.
- (ii) Add a note on fish health certification. 4 + 4
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