2009

M.Sc.

2nd Semester Examination

AQUACULTURE MANAGEMENT AND TECHNOLOGY

PAPER—AMT-2001

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.

Answer the following questions.

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

(a) Why biofertilizer is more advantageous than chemical fertilizer ?

(b) Write the composition of prawn feed ingredients.

(c) What are the differences between expensive and intensive aquaculture.

(d) What do you mean by sludge ?

(e) Write the criteria for larval feed selection at the time of marine fish farming.

(f) How many types of feeding equipment are used in aquaculture ?

(g) State the procedure for determining the recirculating and make-up flow rate in a recirculating aquaculture system ?

(h) State the parameters that may affect the aeration efficiency of an aerator.

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

(a) State the functions of Rotating Biological Contactors (RBC).

(b) Draw a schematic lay-out of sewage treatment plant.

(c) Explain the prospect of Tilapia culture in India.

(d) State the objective of aquaculture development in India.

(e) Describe the hazards of pearl oyster farming.

(f) Determine the no. and size of breeding and spawning tanks required to produce 50 million post larvae (PL) of freshwater prawn. Assume total no. of working days = 300 days; period of one cycle production = 50 days survivality from nauplii to PL = 40%; each berried female weighs 50 gms with fecundity of 21,000 nauplii, average stay of berried female in breeding tank = 7 days, 6 no. of berried females require $1m^2$ of floor area and each berried female requires 100L of water.

(g) Discuss the design of a chinese carp hatchery with proper diagram.

(h) What is sea-weed ? State the commercial uses of sea-weed.

3. Answer *two* of the following : 8×2

(a) Explain the developmental stages of freshwater prawn with diagram. 8

(b) Discuss the shrimp farming techniques based on :

(i) Water aeration and circulation ;

(ii) Population sampling & health assessment ;

(iii) Feed management ;

(iv) Harvesting & transport.

(c) Write the natural life cycle of coldwater fish. Add a note on prospect of coldwater fish culture in India. 5+3

(d) Explain the hatchery techniques of marine fish seed production. State the procedure of graft tissue preparation for artificial pearl culture. 4+4
