2008

AQUACULTURE MGT. & TECH.

PAPER—AMT-2004

Full Marks : 40

Time : 2 hours

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

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 whenever necessary

1. Answer any *five* of the following: 2x5

(*a*) What do you mean by gynogenesis ?

(*b*) Write the names of any two fish steroid hormones.

(*c*) What do you mean by recombinant DNA ?

(*d*) What do you mean by biofertilization ?

(*e*) How the sterile fish can be produced ?

(*f*) What are the role of Estradiol in sex-reversal of fish ?

(*g*) Enumerate the constraints of androgenesis.

(*h*) What is biofilter ?

(*i*) How does the fish sterility help in aquaculture ?

(*j*) Write the importance of recombinant vaccines.

2. (*a*) What is mono-sex ?

(*b*) How many types of mono-sex population can be produced by chromosomal manipulation ?

(*c*) Briefly state the techniques to be followed for production of mono-sex. 2 + 2 + 6

3. (*a*) What are the differences between Meiotic and Mitotic gynogenesis ?

(*b*) State the problems of cryopreservation of fish egg and embryos (below six somite stage).

(*c*) Illustrate the functions of cryoprotectant. 3 + 4 + 3

4. (*a*) What do you mean by tissue culture ?

(*b*) Discuss the procedure to be followed for cell counting using the Hemocytometer.

(*c*) What are the precautions to be taken in maintaining fish cell line ? 2 + 4 + 4

5. Answer the following : $2\frac{1}{2} \times 4$

(*a*) Mention the significance of cryopreservation in aquaculture.

(*b*) Effluent Management and Bioremediation in aquaculture.

(*c*) Progress of aquaculture through biotechnological manipulation.

(*d*) Add a note on hybridogenesis.

6. Write short notes (any *two*) : 5 x 2

(*i*) Biotechnological approach to disease management

(*ii*) Techniques of DNA fingerprinting

(*iii*) Merits and demerits of transgenic fish

(*iv*) Importance of PCR in aquaculture.
