

**M.Sc. 2nd Semester Examination, 2010**

**AQUACULTURE MANAGEMENT AND  
TECHNOLOGY**

*(Fish Breeding and Hatchery Management)*

PAPER — AMT-1203

*Full Marks : 40*

*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. Write in brief on *four* of the following : 2 × 4
- (a) Define inbreeding and crossbreeding.
- (b) Mention the composition of Gillson's solution.  
State its use.
- (c) What do you mean by reciprocal translocation ?

*(Turn Over)*

- (d) What are the advantages of monosex fish culture ?
- (e) What is hybrid vigour ?
- (f) Define mutagen. Give two examples of chemical mutagen.
- (g) Calculate the quantity and weight of brooder required for production of 30 lakh spawn.
- (h) State the technique of induced breeding of freshwater prawn.

2. Write on *four* of the following : 4 × 4

- (a) Discuss the technique of Cryopreservation of fish milt.
- (b) Add a note on the need of genetically improved fish stock.
- (c) Write down the method of Bundh breeding of IMC in West Bengal.
- (d) Mention the criteria for selection of brooder.
- (e) Enumerate the health management practices of carp brooders.

(f) Discuss the advantages of synthetic hormone used in fish breeding.

(g) Give an idea about the seed production of *Clari~~opsis~~<sup>is</sup> batrachus*.

(h) How would you estimate the fecundity of fish ?

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

(a) (i) Define induced breeding and hypophysation.

(ii) Enlist different types of hatchery evolved in India for fish seed production.

(iii) Design the following parts of an Eco-hatchery for production of 30 lakh IMC spawns per breeding : (I) Breeding pool (II) Incubation pool. 2 + 2 + 4

(b) (i) Discuss different methods of collection of fish seed from natural sources.

(ii) What are the different transportation system of fish seed used in India ?

(iii) How would you minimize the mortality during transportation of fish seed ? 3 + 3 + 2

(c) (i) What do you mean by multiple breeding ?

(ii) How would you care the multiple spawner ?

(iii) Mention the advantages and disadvantages of multiple breeding 2 + 3 + 3

(d) (i) What do you mean by 'inter-specific hybridization' and 'intra-specific hybridization' ?

(ii) Discuss the methods of selection ?

(iii) Add a note on the effect of selection.

2 + 3 + 3