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PG/IIS/AMT - 2

M.Sc. 2nd Semester Examination, 2014

**AQUACULTURE MANAGEMENT AND
TECHNOLOGY**

(Fish Nutrition, Informatics and Ornamental Fish)

PAPER— AMT - 202

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. Answer four of the following : 2 × 4**
- (a) Define water stability of fish feed.**
 - (b) What do you mean by aquascaping ?**
 - (c) State the use of binder in fish feed preparation with two suitable examples.**

(Turn Over)

(2)

- (d) Write down the composition of Bristol's solution. Mention its importance.
- (e) Define Digestibility co-efficient (D%).
- (f) Mention two indigenous and two exotic ornamental plants used in West Bengal.
- (g) Explain 'Digestible energy (DE)' and Metabolisable energy (ME)'.
- (h) What do you mean by feeding frequency and feed allocation in *Pennuss Monodon* culture ?

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

- (a) Write in brief on the Laboratory culture of *Spirulina* sp.
- (b) Discuss about non-conventional fish feed ingredients.
- (c) State the problems and prospects of Ornamental fish marketing in West Bengal.
- (d) Write a short notes on *Tubifex* culture.

(3)

- (e) Discuss on the water quality and feeding management of a home aquarium.
- (f) Enumerate the role of antioxidant on aquafeed preparation.
- (g) How probiotic feed helps in aquafarming ? Explain.
- (h) Discuss about antinutritional factors available in plant feed ingredients.

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

(a) (i) Discuss on the 'Least Cost' and 'best buy' technique with suitable example.

(ii) Calculate the growth, FCR and PER from the following data :

Number of test fish	: 20
Initial weight	: 10 g
Final weight	: 22 g
Duration of Experiment	: 72 days
Feed given to the fish	: 6 % bwd ⁻¹
Protein percentage in feed	: 30 %

(iii) Add a note on fish feed attractants.

$$\left(2\frac{1}{2} + 4 + 1\frac{1}{2}\right)$$

- (b) (i) Define growth curve of fish.
- (ii) Enlist the impacts of different factors on fish growth.
- (iii) Discuss in brief on the 'pH' and 'ration size' and possible impact on fish growth. $\left(2\frac{1}{2} + 1\frac{1}{2} + 4\right)$
- (c) (i) Make a list of different components used for home aquarium construction.
- (ii) Enlist common name and scientific name of 2 live bearer and 2 egg layer ornamental fishes cultured in West Bengal.
- (iii) Discuss the breeding and culture methods of Goldfish. $2 + 2 + 4$
- (d) Write short notes on the following : $\left(3 + 2\frac{1}{2} + 2\frac{1}{2}\right)$
- (i) Brine shrimp culture procedure
- (ii) Vitamin requirement in fish feed
- (iii) Micro-encapsulated fish feed.
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