

M.Sc. 1st Semester Examination, 2012

**AQUACULTURE MANAGEMENT
AND TECHNOLOGY**

(Physiology of fin Fish and Shell Fishes)

PAPER – AMT-104

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. Answer *four* of the following questions : 2 × 4
- (a) Write the names of gastro-intestinal hormones of fishes.
 - (b) State the impact of temperature on digestion process of fishes.

- (c) How many plates are present in cardiac stomach of freshwater prawn ?
- (d) Define gross energy and metabolic energy.
- (e) Differentiate gastric fish from a gastric one.
- (f) What is rate limiting enzyme ?
- (g) State the mode of feeding of parasitic fishes.
- (h) What are the peculiarities of fish heart ?

2. Answer *four* of the following :

4 × 4

- (a) Briefly explain the functions of associate digestive gland of bony fishes.
- (b) Narrate the structural modifications of mouth based on feeding habits of fishes.
- (c) Write the osmoregulatory mechanisms of freshwater prawn.
- (d) Describe the characteristic features of fish blood vessel.
- (e) State the structural peculiarities of pituitary of hag fishes and elasmobranchs.

- (f) Briefly discuss the structural composition of fish blood.
- (g) Elucidate the Accessory Respiratory structures of *Clasias* sp. and *Anabas* sp..
- (h) State the hormonal control of osmoregulation in fishes.

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

- (a) What is spermatogenesis and oogenesis ? Briefly describe the stages of organogenesis in fishes with diagram. 3 + 3 + 2
 - (b) Discuss the functional details of different sense organs in fishes. Add a note on the hormonal control of gonadal development in fishes. 4 + 4
 - (c) What is the functions of hepatopancreas of prawn ? Briefly describe the absorption process of digested food materials in fishes. Add a note on the olfactory senses of fishes. 2 + 4 + 2
 - (d) Define glycolysis. Describe the pathway of ATP formation. Add a note on course of blood circulation through the prawn gill. 2 + 4 + 2
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