

2013

M.Sc.

1st Semester Examination

AQUACULTURE MANAGEMENT & TECHNOLOGY

PAPER—AMT-104

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.

(Physiology of Fin Fish and Shell Fishes)

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

- (a) What is gastric fish? Cite an example.
- (b) Enlist the component of stomodaeum of fresh water prawn.
- (c) Define parasitic fishes. Give an example.

(Turn Over)

- (d) Define gross energy and metabolic energy.
- (e) What are the components of fish blood?
- (f) State the impact of temperature on digestion process of fishes.
- (g) 'Fish heart is called single circuit' — Justify.
- (h) How many plates are present in freshwater prawn stomach?

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

- (a) Briefly discuss the structural modification of mouth based on feeding habit in fish.
- (b) Explain the absorption process of digested food materials through GI tract in fish.
- (c) Write in brief the hormonal control of fish reproduction.
- (d) Describe the process of haematopoiesis.
- (e) Narrate the steps of β (Beta) oxidation.
- (f) Briefly illustrate the cutaneous senses and olfactory senses of bony fishes.
- (g) Enlist different hormones secreted by fish pituitary gland and explain their functions.

(h) Write the names and functions of different enzymes involved in Glycolysis pathway.

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

(a) Define osmoregulation. Compare the osmoregulatory mechanism of marine and freshwater fishes. Briefly discuss about the functions of different organs involved in osmoregulation.

1+3+4

(b) What is gametogenesis? Compare spermatogenesis and oogenesis. Give an account on the embryonic development of freshwater prawn.

1+3+4

(c) What are the mechanism of respiration of freshwater prawn? Discuss about the respiratory structure of freshwater prawn with diagram. Add a note on respiratory mechanisms of marine shark.

2+4+2

(d) Write short notes on any *two* : 4×2

(i) Gills of bony fishes;

(ii) Alimentary structure of freshwater prawn.

(iii) Characteristic features of fish blood vessels;

(iv) Significance of accessory respiratory organ.