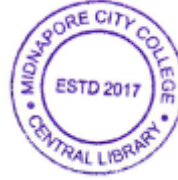


2025

3rd Semester Examination

4-Years B.F.Sc.

Paper : BFSC-307



(Physiology of Finfish and Shellfish)

Full Marks : 50

Time : Two Hours

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words as far as practicable.*

Group - A

1. Answer any *ten* questions :  $2 \times 10 = 20$

(a) Explain the significance of mucus secretion in fish and shellfish.

(b) What is the primary function of gill lamellae in fish?

(c) Discuss the role of thyroid hormones in fish metamorphosis.

(d) What are the major differences between the circulatory systems of finfish and shellfish?

(e) Mention two physiological stress responses in aquatic organisms.

P.T.O.



- (f) Define the function of the pyloric caeca in fish digestion.
- (g) Name the gas transmitter involved in fish respiration.
- (h) What type of muscle fibers are predominantly found in fish swimming muscles?
- (i) How do shellfish respire in water and on land?
- (j) What is the primary function of the *Corpuscles of Stannius* in fish?
- (k) How do fish achieve buoyancy and efficient swimming?
- (l) What is ram ventilation in fish respiration?
- (m) What do you mean by venous heart?
- (n) What is meant by "standard metabolism" in fish physiology?
- (o) Define the term "buccal pumping" in fish breathing.

**Group - B**

2. Answer any **six** questions :

5×6=30

- (a) Describe the structure and function of kidneys in finfish.
- (b) Distinguish between fecundity and gonadosomatic index.



( 3 )

- (c) Explain the process of oogenesis in finfish.
- (d) What are the major endocrine glands in fish and their functions?
- (e) What are Petasma and Thelycum? Mention their functions.
- (f) How do hormones regulate growth and metabolism in fish?
- (g) Describe the general structure of the digestive system in finfish.
- (h) Discuss the functioning and significance of the ampullae of Lorenzini in cartilaginous fishes. 2+3
- (i) Describe the structure and function of an accessory respiratory organs in finfish.
- (j) Explain the mechanism of single circulatory system in fish and the path of blood flow with suitable diagram.
-