

**S-177**

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## **MZO-612B**

**Applied Freshwater Aquaculture  
(Fish Breeding & Production Technology)**

M.Sc. Zoology (MSCZO)

4th Semester Examination, 2022 (Dec.)

**Time : 2 Hours]**

**[Max. Marks : 35**

**Note :** This paper is of Thirty Five (35) marks divided into two (02) Sections A and B. Attempt the questions contained in these sections according to the detailed instructions given therein.

### **SECTION–A**

**(Long Answer Type Questions)**

**Note :** Section 'A' contains Five (05) long answer type questions of Nine and Half (9½) marks each. Learners are required to answer any Two (02) questions only.

(2×9½=19)

- 1.** What is PCR? Explain the process of DNA amplification and the enzymes involved in it.

2. What are Gene Probes? Explain their types and uses.
3. Describe various Bacterial diseases in fishes, their pathology and treatment.
4. Discuss following Cestode fish disease :
  - (a) *Ligula*.
  - (b) *Dibothriocephalus*.
5. Explain the structure and function of Nucleuses with a well illustrated diagram.

## **SECTION-B**

### **(Short Answer Type Questions)**

**Note :** Section 'B' contains Eight (08) short answer type questions of Four (04) marks each. Learners are required to answer any Four (04) questions only. (4×4=16)

1. Explain double helical model of DNA and the Chargaff's rule.
2. What do you understand by Primer? Elaborate their role in DNA synthesis.
3. Explain Branchiomycooses and its treatment in fishes.

4. Discuss viral lymphocystis disease of fish.
  5. Write a note on fish diseases caused by nematodes.
  6. Elaborate gill rot disease and its treatment.
  7. Explain the process and uses of Paper Electrophoresis.
  8. Describe various fish pathological changes in fish tissues and sign of sickness in fishes.
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