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The Assam Royal Global University, Guwahati

Royal School of Life Sciences

M.Sc. Zoology, 4th Semester

Semester End Examination, June 2023

Course Title: Fish Genetics and Fish Growth

Course Code : ZOO144D402

Time: 3 Hours

Maximum Marks: 70

Note: Attempt all questions as per instructions given.

The figures in the right-hand margin indicate marks.

Section – A

1. Attempt **all** questions. (Maximum word limit 50) 2 x 8
- Define the term polyploidy.
 - Write a short note on sex determination in fishes.
 - What do you understand by the term sex reversal in fishery?
 - Why is fish breed selection is important?
 - Name at least four fish hormones.
 - Define the term 'gene transfer'.
 - What is fish growth rate?
 - Write the significance of hepatosomatic index.

Section – B

2. Attempt **any one** of the following: 12 x 1
- Describe how mutation is a cause of evolution in fishes.
 - Write in detail about the various types of chromosomal mutations found in fishes.
3. Attempt **any two** of the following: 7 x 2
- Explain the role of genetics in fish selection and breeding.
 - Elaborate on fish hybridization.
 - Distinguish between gynogenesis and androgenesis.
4. Attempt **any two** of the following: 7 x 2
- Enlist the various steps involved in cryopreservation of fish gametes.
 - Mention the various molecular techniques used in fishery.
 - Describe the process of transgenic fish production.
5. Attempt **any two** of the following: 7 x 2
- Write in detail about the various factors responsible for fish growth.
 - Differentiate between hepatosomatic index and gonadosomatic index.
 - Explain the length-weight relationship in fish growth.