



**MASINDE MULIRO UNIVERSITY OF
SCIENCE AND TECHNOLOGY
(MMUST)**

MAIN CAMPUS

**UNIVERSITY EXAMINATIONS
2023/2024 ACADEMIC YEAR
SEMESTER TWO**

**MAIN EXAMINATION FOR
BACHELOR OF SCIENCE IN FISHERIES AND AQUACULTURE**

COURSE CODE: AAF 112

COURSE TITLE: DEVELOPMENTAL BIOLOGY OF FISHES

DATE: 26.04.2024

TIME: 11.30-1.30PM

INSTRUCTIONS TO CANDIDATES

This paper is divided into two sections, **A and B**. Answer ALL Questions in SECTION A and any Two in SECTION B

MMUST observes ZERO tolerance to examination cheating

This Paper Consists of 2 Printed Pages. Please Turn Over

Page 1 of 2

SECTION A: ANSWER ALL QUESTIONS (40 MARKS)

1. Define the following terms as related to fish development
 - a) Oviparous
 - b) Demersal spawners

(4 marks)
2. Describe any three factors that trigger maturation and spawning in fish

(6 marks)
3. Identify any 3 germ layers and explain their roles in embryonic development

(6 marks)
4. a) Describe the events that trigger the transition from pre-embryonic to embryonic development

(5 marks)

b) Describe the spermatogenesis process of fish development

(5 marks)
5. Describe five behavioral adaptations that aid in survival of fish during hatching and larval phases

(5 marks)
6. Outline the impacts of senescence on reproductive capabilities and overall longevity in fish development

(5 marks)
7. Explain any four factors that can affect the stream flow

(4 marks)

SECTION B: ANSWER ANY TWO QUESTIONS (30 MARKS)

8. Discuss the Environmental factors that affect fish nutrition and development.

(15 Marks)
9. Describe the process of oogenesis during pre-embryonic fish development.

(15 marks)
10. Discuss the various adaptation features of fish respiratory systems to diverse aquatic habitats.

(15 marks)