



(University of Choice)

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

**MAIN CAMPUS
MAIN EXAMINATIONS**

**UNIVERSITY EXAMINATIONS
2021 / 2022 ACADEMIC YEAR**

**SECOND YEAR SECOND SEMESTER EXAMINATIONS
FOR THE DEGREE
OF
BACHELOR OF SCIENCE IN
BIOLOGY/BIOTECHNOLOGY/EDUCATION SCIENCE/
AGRICULTURAL EDUCATION & EXTENSION**

COURSE CODE: SZL 222

COURSE TITLE: DEVELOPMENTAL BIOLOGY

DATE: THURSDAY, 28TH APRIL 2022

TIME: 8:00 – 10:00 A.M.

INSTRUCTIONS TO CANDIDATES

Answer QUESTION 1 AND ANY OTHER 3 QUESTIONS

TIME: 2 Hours

MMUST observes ZERO tolerance to examination cheating

This Paper Consists of 2 Printed Pages. Please Turn Over.



QUESTION ONE**(25 MARKS)**

- a. Describe the different types of eggs based on the amount of yolk. (6 marks)
- b. Define the term sperm capacitation and explain its significance . (4 marks)
- c. Name two structures derived from each of the following germinal layers of an embryo;
- i. Neural crest (2 marks)
 - ii. Neural tube (2 marks)
 - iii. Hypomere (2 marks)
- d. Describe the process of the formation of the human sperm. (4 marks)
- e. Using amphibian limb as an example, explain the concept of regeneration. (5 marks)

QUESTION TWO**(15 MARKS)**

Give a detailed account of the process of fertilization in vertebrates.

QUESTION THREE**(15 MARKS)**

Describe the development of the ear in the vertebrates.

QUESTION FOUR**(15 MARKS)**

Describe the female reproductive system and the process of oogenesis.

QUESTION FIVE**(15 MARKS)**

Citing examples, describe the different types of cleavages as determined by the distribution of yolk.