



MACHAKOS UNIVERSITY

University Examinations for 2021/2022 Academic Year

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

SECOND YEAR FIRST SEMESTER EXAMINATION FOR

BACHELOR OF SCIENCE (BIOLOGY)

SZL 203: DEVELOPMENTAL BIOLOGY

DATE: 7/12/2021

TIME : 11.00-1.00 PM

INSTRUCTIONS

Answer Question 1 and any other two question

Illustrate your answer with clean labelled diagrams wherever appropriate

QUESTION ONE (COMPULSORY) (30 MARKS)

- a) Explain the role of the sperm in reproduction. (3 marks)
- b) Briefly describe the process of blastulation. (3 marks)
- c) Outline the process of wound healing in mammals. (3 marks)
- d) Explain the impact of amount of yolk on cleavage. (3 marks)
- e) Explain the rules of cleavage. (3 marks)
- f) Explain the origin and functions of the allantois during embryology in chicken. (3 marks)
- g) Define autotomy and why it occurs. (3 marks)
- h) Explain the characteristics of haemochorialis placenta. (3 marks)
- i) Explain the neoteny can be reversed. (3 marks)
- j) Define the modes of development in biology. (3 marks)

QUESTION TWO (20 MARKS)

Discuss the process of spermatogenesis

QUESTION THREE (20 MARKS)

Discuss fate maps

QUESTION FOUR (20 MARKS)

- a) Explain Morphophalactic regeneration (10 marks)
- b) In reptiles, the regenerated tail is a mock imitation of the original. Discuss (10 marks)

QUESTION FIVE (20 MARKS)

- a) Briefly outline the process of fertilization in mammals. (10 marks)
- b) Discuss the regulation of metamorphosis in insects (10 marks)