
CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

**EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE AND
BACHELOR OF EDUCATION**

ZOOL 331: DEVELOPMENTAL BIOLOGY

STREAMS: BSC/BED Y3S2

TIME: 2 HOURS

DAY/DATE: TUESDAY 09/04/2019

11.30 A.M. – 1.30 P.M.

INSTRUCTIONS:

- **Answer all questions in section A and any other two from section B**
- **Do not write anything on the question paper**

SECTION A (30 MARKS): ANSWER ALL

1. Distinguish between the following terms
 - (a) Animal and vegetal poles (2 marks)
 - (b) Epimorphosis and morpholaxis (2 marks)
 - (c) Totipotent and pluripotent cells (2 marks)
2. Describe the structure of a mammalian ovum (4 marks)
3. Describe the modification of a germ cell to form a sperm cell in mammals. (5 marks)
4. Briefly describe the methods used to generate fate maps in embryology. (6 marks)
5. Explain processes that occur during metamorphosis. (4 marks)
6. Explain the interaction of sperm and egg during fertilization. (5 marks)

SECTION B (40 MARKS)

7. Discuss role of environmental factors in the development of congenital malformations. (20 marks)
 8. Describe tissue and germ cell layer formation in mammalian embryo. (20 marks)
 9. Discuss the contribution of early scientists to the development of embryology. (20 marks)
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