

LAIKIPIA



UNIVERSITY

## UNIVERSITY EXAMINATIONS

**SECOND SEMESTER 2023/2024 ACADEMIC YEAR**

**THIRD YEAR EXAMINATION FOR THE DEGREE OF  
BACHELOR OF SCIENCE (GENERAL) AND BACHELOR  
OF EDUCATION (SCIENCE)**

**ZOOL 321: DEVELOPMENTAL BIOLOGY**

***STREAM: R***

***TIME: 2 HRS***

***DAY: TUESDAY [2.30P.M -4.30P.M]***

***DATE: 16/04/2024***

**THIS QUESTION PAPER CONSISTS OF THREE (3) PAGES**

**PLEASE DO NOT OPEN UNTIL THE INVIGILATOR SAYS SO.**



**Instructions;** Answer all questions in section **A** and any other two in **B**

**QUESTION ONE**

Define the terms

**(5 Marks)**

- i) Differentiation
- ii) Development
- iii) Morphogenesis
- iv) Gastrula
- v) Vitellogenesis

**QUESTION TWO**

State three functions of notochord.

**(3 Marks)**

**QUESTION THREE**

Describe the process of late block to polyspermy.

**(6 Marks)**

**QUESTION FOUR**

Explain the main outstanding difference between holoblastic cleavage and meroblastic cleavage  
State the four planes of cleavages

**(6 Marks)**

**QUESTION FIVE**

State and explain the fate of three germ layers.

**(6 Marks)**

**QUESTION SIX**

Briefly explain threshold concept in tad pole metamorphosis

**(4 Marks)**

**QUESTION SEVEN**

Briefly describe the process of ecdysis in a named insect

**(6 Marks)**

**QUESTION EIGHT**

Explain Aristotle's contribution to embryology

**(4 Marks)**



**SECTION B: ANSWER ANY TWO QUESTIONS (30 Marks)**

**QUESTION NINE**

Discuss the various five experiments that indicate that cell are said to be committed to a certain fate during embryonic development **(15 Marks)**

**QUESTION TEN**

Discuss the process of oogenesis and its control **(15 Marks)**

**QUESTION ELEVEN**

- a) State **three** types of eggs based on distribution of yolk. **(3 Marks)**
- b) Discus the process of gastrulation **(12 Marks)**

