



*(Knowledge for Development)*

**KIBABII UNIVERSITY**  
**UNIVERSITY EXAMINATIONS**  
**2019/2020 ACADEMIC YEAR**

**THIRD YEAR FIRST SEMESTER**

**SUPPLEMENTARY/SPECIAL EXAMINATIONS**

**FOR THE DEGREE OF BACHELOR OF EDUCATION (SCIENCE) (B. ED SCIENCE)  
AND BACHELOR OF SCIENCE (B. SC BIOLOGY)**

**COURSE CODE: SZL 312**

**COURSE TITLE: DEVELOPMENTAL BIOLOGY**

**DATE:** 10<sup>th</sup> February, 2021

**TIME:** 8:00 -10:00 a.m.

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**INSTRUCTIONS TO CANDIDATES**

Answer Question one (1) and any other two (2) Questions. Question one is compulsory and carries 30 marks, the other Questions carry 20 marks each.

TIME: 2 Hours

This paper consists of 2 printed pages. Please Turn Over



KIBU observes ZERO tolerance to examination cheating

**Q1.)**

- a.) Define Developmental Biology and mention one important reason why developmental biology is important especially to humans developmental  
3mks
- a.) Define the following terms ; 5mks
- i) Morphogenesis
  - ii) Cortical rotation
  - iii) Gastrula
  - iv) Induction
  - v) morula
- b.) Distinguish between cell cleavage and cell multiplication 2mks
- c.) Write short notes on endochondral ossification 3mks
- e.) Briefly describe the process of Vitellogenesis 3mks
- f.) Outline two functions of Sertoli cells 3mks
- g.) Outline the five basic steps involved in recognition of sperm and egg 3mks
- h.) Give any three basic types of cell movements involved in gastrulation 3mks
- i.) Briefly explain the cleavage process 3mks
- j.) Explain factors that determine cleavage patterns in animals 2mks

**Q2.)**

- a) Describe the process of acrosome reaction in a named animal 6mks
- b) Describe the mechanism of neurulation in mammals 10mks
- c) Explain how the sperm is adapted to its function 4mks

**Q3.)**

Give an account of spermatogenesis in mammals. 20mks

**Q4.)**

Describe the development, structure and function of mammalian placenta 20mks

**Q5.)**

Discuss the four principles of Karl Ernst von Baer, referred to as von Baer's laws 20mks