



(Knowledge for Development)

KIBABII UNIVERSITY

UNIVERSITY EXAMINATIONS 2017/2018 ACADEMIC YEAR

SECON YEAR 2ND SEMESTER SPECIAL/SUPPLEMENTARY EXAMINATIONS

**FOR THE DEGREE OF BACHELOR OF SCIENCE IN BIOLOGY,
BACHELOR OF SCIENCE IN BIORESOURCE MANAGEMENT,
BACHELOR OF EDUCATION SCIENCE AND BACHELOR
AGRICULTURE EDUCATION AND EXTENSION**

COURSE CODE: SZL 211

COURSE TITLE: FUNDAMENTALS OF CELL BIOLOGY

DATE: 5th October, 2018

TIME: 11:30 -1:30 p.m.

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

QUESTION ONE

- a) Outline the exceptions to the cell theory (3 Marks)
- b) State Schleiden's observations regarding the cells. (3 Marks)
- c) Describe the basic types of leucoplasts. (3 Marks)
- d) What is meant by the term cell biology? (4 Marks)
- e) Using a well labelled diagram, describe a mitochondrion. (5 Marks)
- f) State the contributions of the following scientists to the cell theory.
 - i). Rudolph Virchow (2 Marks)
 - ii). Matthias Schleiden (2 Marks)
- g) Highlight the events that occur during the interphase. (4 Marks)
- h) Describe the composition of a nucleotide. (4 Marks)

QUESTION TWO

- a) Explain the significance of meiosis in living organisms. (10 Marks)
- b) State the role of plasmids in bacteria. (6 Marks)
- c) Highlight distinct characteristic features between plant and animal cells. (4 Marks)

QUESTION THREE

- a) Clearly point out distinguishing features between prokaryotes and eukaryotes. (10 Marks)
- b) Describe the diversity of cell walls in bacterial based on Gram staining. (10 Marks)

QUESTION FOUR

With examples in each case, state the components that make up the following:-

- i. Carbohydrates (5 Marks)
- ii. Nucleic acids (5 Marks)
- iii. Proteins (5 Marks)
- iv. Fats (5 Marks)

QUESTION FIVE

Describe the structure and functions of the following cell organelles:-

- i. Endoplasmic reticulum (5 Marks)
- ii. Mitochondrion (5 Marks)
- iii. Golgi apparatus (5 Marks)
- iv. Ribosomes (5 Marks)