



# **MAASAI MARA UNIVERSITY**

**REGULAR UNIVERSITY EXAMINATIONS**

**2019/2020 ACADEMIC YEAR**

**FIRST YEAR FIRST SEMESTER**

**SCHOOL OF NATURAL RESOURCE AND ANIMAL  
SCIENCES**

**CERTIFICATE IN TOURISM AND WILDLIFE  
MANAGEMENT**

**COURSE CODE: CTW 002**

**COURSE TITLE: INTRODUCTION TO BIOLOGICAL  
SCIENCES I.**

**DATE: 11<sup>TH</sup> DECEMBER, 2019**

**TIME: 1430 - 1630HRS**

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## **Instructions:**

Answer **ALL** questions in section **A** and any other **THREE** in section **B**

**SECTION A (25MARKS) COMPULSORY QUESTION.**

- a) Define and explain the term evolution (4mks)
- b) Briefly describe the five principles of modern cell theory. (5mks)
- c) i) Explain using examples the difference between prokaryotic and eukaryotic cells. (6mks)  
ii) Differentiate between unicellular and multicellular organisms. (4mks)
- d) Briefly explain 3 functions of the cell wall (6mks)

**SECTION B (45MARKS) ANSWER ANY THREE QUESTIONS.**

**QUESTION TWO.**

- a) Describe the difference between a plant cell and an animal cell. (3mks)
- b) Distinguish between membrane proteins and glycoproteins. ( 3mks)
- c) i) State the 3 layers of a plant cell wall. ( 3mks)  
ii) Using illustration describe the structure of an animal cell. (6mks)

**QUESTION THREE.**

- a) Explain the difference between sexual and asexual reproduction (3mks)
- b) Define the following terms as used in cell reproduction. (3mks)
  - i) Mitosis
  - ii) Meiosis
- c) Briefly describe the 5 phases of eukaryotic cell division. (5mks)
- d) State giving specific examples the four types of organic compounds found in cells of living organisms. ( 4mks)

**QUESTION FOUR.**

- a) Explain the term evolutionary genetics (2mks)
- b) Briefly describe the various mechanisms of genome evolution (5mks)
- c) Briefly explain the following terms as used in genetics ( 2mks)
  - i) Mutation.
  - ii) Allele.
- d) Using illustration describe the process by which genes make proteins (6mks)

**QUESTION FIVE**

- a) Differentiate between a nucleoid and
- b) a membrane bound nucleus. (2mks)
- c) State and explain the function of seven organelles found in eukaryotic cell. (7mks)
- d) Using illustrations describe the structure of a typical plant cell. (6mks)

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