



# **MAASAI MARA UNIVERSITY**

**REGULAR UNIVERSITY EXAMINATIONS  
2018/2019 ACADEMIC YEAR  
FIRST YEAR FIRST SEMESTER**

**SCHOOL OF TOURISM & NATURAL RESOURCE  
MANAGEMENT  
CERTIFICATE IN TOURISM AND WILDLIFE  
MANAGEMENT**

**COURSE CODE: CTW 002**

**COURSE TITLE: INTRODUCTION TO BIOLOGICAL  
SCIENCES 1**

**DATE: 29.4.2019**

**TIME: 8.30 - 10.30AM**

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**INSTRUCTION TO CANDIDATES:**

This paper has two sections A & B. Answer Question **ONE** and any other **TWO** Questions

## **SECTION A: ANSWER QUESTION ONE (30MKS)**

### **QUESTION 1**

- a) The studies on cell history have been done by several scientists whose observation has contributed to the modern cell theory. State five principles of modern cell theory **(5mks)**
- b) Differentiate between prokaryotic and eukaryotic cells **(5mks)**
- c) (i) Name four major organic compounds making up cells of organisms. **(4mks)**
- (ii) State **two** functions of each of the four organic compounds named in (i) above **(8mks)**
- d) Identify **four** cell organelles that are only found in a prokaryotic cell and state their functions **(8mks)**

## **SECTION B: ANSWER ANY TWO QUESTIONS (40MKS)**

### **QUESTION 2**

- a) Describe the structure and function of two organelles that are only found in a plant cell and not in animal cell **(6mks)**
- b) Monosaccharides combine to form disaccharides through a process of dehydration synthesis. Using diagrams illustrate the formation of maltose molecule **(4mks)**
- c) (i) Distinguish between saturated and unsaturated fatty acids **(2mks)**
- (ii) Using illustrations where necessary describe the structure and function of lipids **(8mks)**

### **QUESTION 3**

- a) Distinguish between sexual and asexual reproduction **(2mks)**
- b) Describe the three types of asexual reproduction and give an example in each case **(9mks)**
- c) Briefly explain the four levels of proteins **(4mks)**
- d) State and explain the functions of proteins in living organisms **(5mks)**

### **QUESTION 4**

- a) Explain four mechanisms of evolution **(4mks)**
- b) Briefly explain three primary sources of genetic variation in a population **(6mks)**
- c) Using an example explain the meaning of the term coevolution **(2mks)**
- d) With the aid of illustrations distinguish between purines and pyrimidines. Give examples in each case **(5mks)**
- e) State three differences between RNA and DNA **(3mks)**

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