



MAASAI MARA UNIVERSITY

REGULAR UNIVERSITY EXAMINATIONS

2018/2019 ACADEMIC YEAR

FIRST YEAR FIRST SEMESTER

**SCHOOL OF TOURISM & NATURAL RESOURCES
MANAGEMENT**

**CERTIFICATE IN TOURISM AND WILDLIFE
MANAGEMENT**

COURSE CODE: CTW 002

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

DATE: 6TH DECEMBER 2018

TIME: 0830 - 1030HRS

INSTRUCTION TO CANDIDATES

- This paper has two sections A & B.
- Answer question **ONE** in section A and any **TWO** in section B.

SECTION A : ANSWER ONE QUESTION (30MKS)

QUESTION 1

(a). State the functions of the following cell organelles (5mks)

- i. Ribosomes
- ii. Centrioles
- iii. Golgi apparatus
- iv. Chloroplast
- v. Chromosomes

(b) .(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)

(c) Identify **three** cell organelles that are only found in a prokaryotic cell and state their functions. (6mks)

(d) State three differences between DNA and RNA (3mks)

(f) Differentiate between prokaryotic and eukaryotic cells. (4mks)

SECTION B: ANSWER ANY TWO QUESTIONS IN THIS SECTION (40MKS)

QUESTION 2.

(a) Most cells are small in size (microscopic). Give two reasons for this. (2mks)

(b) Briefly describe the Oparin-Haldane hypothesis about the origin of life. (3mks)

(c) Monosaccharides combine to form disaccharides through a process of dehydration synthesis. Using diagrams illustrate the formation of maltose molecule. (4mks)

(d) (i) Distinguish between saturated and unsaturated fatty acids. (2mks)

(ii) Using illustrations where necessary describe the structure and function of lipids. (9mks)

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. (6mks)

(c) With reference to advantages and disadvantages only, compare and contrast sexual and asexual reproduction. (4mks)

(d) Briefly explain the four levels of proteins. (4mks)

(e) State and explain the functions of proteins in living organisms. (4mks)

QUESTION 4.

(a) Explain four mechanisms of evolution. (4mks)

(b) Briefly explain three primary sources of genetic variation in a population. (6mks)

(c) Distinguish between a gene and allele. (2mks)

(d) Using an example explain the meaning of the term coevolution (1mk)

(e) With the aid of illustrations distinguish between purines and pyrimidines. (4mks)

(f) State three functions of nucleotides. (3mks)

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