

# RENA COLLEGE MAYUGE

P530/2

**BIOLOGY**

**Paper 2**

2 hours 30 minute

**UGANDA ADVANCED CERTIFICATE OF EDUCATION**

**S.5 END TERM I EXAMINATIONS 2023**

**BIOLOGY**

**Paper 2**

2 Hours 30 minutes

## **Instructions:**

This paper is composed of two sections A and B. Attempt question one from section A and any three questions in section B.

### **Section A (40 marks)**

1. An investigation was carried out to investigate the effect of temperature on the rate of an enzyme - controlled reaction. The substrate enzyme concentrations were kept constant, at all temperatures investigated, to overcome the law of limiting factors.

Temperature (0°C)	Rate of reaction (mg of product per unit time)
5	0.3
10	0.5
15	0.9
20	1.4
25	2.0
30	2.7
35	3.3
40	3.6
45	3.6
50	2.3
55	0.9
60	0

- a) Plot the data on the graph paper.
- b) Describe the plotted data.
- c) Explain the data you have described in 1(b), above.
- d) Why was the enzyme and substrate concentrated maintained constant?

### SECTION: B

2. Explain the properties of water which make it an important chemical of life.
3. a) Describe the structure of the following chemicals of life.
  - i) Cellulose
  - ii) Protein
  - iii) starch
- b) Show how a triglyceride is formed.
4. a) Describe the changes undergone by chromosomes during meiotic Cell division (no diagram required)
- b) State Mendel's first law of inheritance and explain it.
5. Describe the fluid mosaic model of the plasma membrane.  
(20 Marks).
6. 4. a) Both chlorophyll and carotenoids are involved in light transduction in plants.
  - i) Describe the structure of the chlorophyll molecule.(Diagram **NOT** required)(**05marks**)
  - ii) How is the chlorophyll molecule suited to its function? (**05marks**)
  - iii) Explain the role of carotenoids in light transduction. (**02marks**)
- b) Describe the fate of the photosynthetic products in lipid and protein metabolism in plants. (**08marks**)

END

