

P530/2
BIOLOGY
PAPER 2
JULY/AUG 2024
2 ½ hours



AITEL JOINT MOCK EXAMINATIONS.

Uganda Advanced Certificate of Education

BIOLOGY

PAPER 2

2 HOURS 30 MINUTES

INSTRUCTIONS TO CANDIDATES:

*Answer question 1 in section A plus any three other questions in section B.
Candidates are advised to read the questions carefully, organize their answers and present them logically and precisely, illustrating with well labeled diagrams where necessary.*

SECTION A
COMPULSORY QUESTION (40 MARKS)

1. Two sets of seeds (A) dormant seeds and (B) non dormant seeds were soaked for 24 hours. After this period, investigations were conducted to determine oxygen intake by the seeds. The table below shows the results obtained.

OXYGEN INTAKE (Mg/hr)	DURATION IN HOURS						
	0	10	20	30	40	50	60
Seeds in set A	2	10	8	7	4	3	2
Seeds in set B	3	21	28	37	40	41	42

- a) Plot a graph to represent the information in the table above. (08 marks)
- b) (i) Describe the trend of oxygen intake by seeds in set B. (05 marks)
(ii) Compare oxygen intake in the two sets of seeds. (05 marks)
- c) (i) Suggest reasons for the initial increase in oxygen intake by both sets of seeds up to the 10th hour. (03 marks)
(ii) Explain the difference in the trend of oxygen intake in the two sets of seeds after 10 hours. (10 marks)
- d) (i) Give four ways viable seeds utilize absorbed water. (04 marks)
- e) (ii) State advantages and disadvantages of seed dormancy. (05 marks)

SECTION C (60 MARKS)

Answer only three questions from this section

2. a) How do the components of the plasma membrane ensure its fluidity? (06 marks)
- b) Relate the function(s) of each of the following to the fluidity and porosity of their membranes?
- i. Plasma membrane. (06 marks)
- ii. Rough Endoplasmic Reticulum. (05 marks)
- iii. Golgi apparatus. (03 marks)
3. a) Describe the chemical composition and variety of carbohydrates in nature. (16 marks)
- b) Outline the role of carbohydrates in a plant. (04 marks)

4. (a) Explain what is meant by sex linked and sex limited traits? (05 marks)
(b) Giving examples, discuss how the inheritance of sex linked traits differ from autosomal traits. (15 marks)
5. a) Describe hormonal control of the menstrual cycle in humans. (10 marks)
b) Outline the causes and treatment of infertility. (10 marks)
6. (a) Describe the main features of Neo-Darwinism theory of evolution. (10 marks)
(b) Explain the evidence from the geographical distribution of organisms that supports the theory of evolution described in a) above. (10 marks)

END