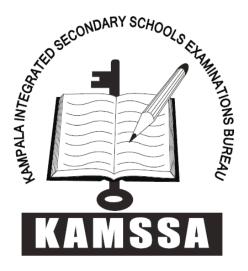
P530/2 Biology Paper 2 July/ August 2022



KAMSSA JOINT MOCK EXAMINATIONS

Uganda Advanced Certificate Of Education

BIOLOGY

Paper 2 2hours 30minutes

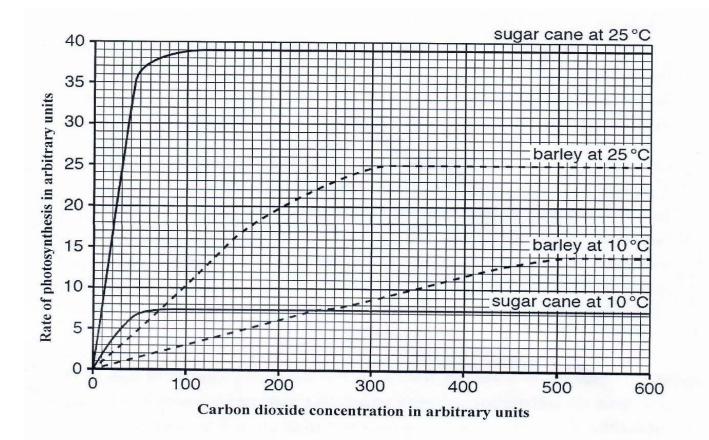
Instructions to candidates:

- This paper consist of section A and B.
- Answer question one in section A plus three others from section B.
- Candidates are advised to write their full names, index numbers, sigture and question in the order attempted on the first page of their answer sheets.
- Candidate s should read questions carefully, organize their answers and present them precisely and logically, illustrating with well labeled diagrams where necessary.

SECTION A (40 MARKS)

Question 1 is compulsory.

 An investigation was carried out to measure the rate of photosynthesis at different concentrations of carbon dioxide in a crop a field. Two different plants, barley and sugar cane, were tested at two different temperatures, 10 °C and 25 °C. The results are shown in the figure below.



(a) Describe the variations of rate of photosynthesis in barley and sugar cane at 10 °C. (08 marks)

- (b)Compare the variations of photosynthetic rate of barley and sugarcane at 10 °C. (06 marks)
- (c) Give a generalized explanation for the trend of the photosynthetic rate shown by the results in the figure above. (06 marks)

(d) Explain why sugar cane had a higher rate of photosynthesis than barley at 25 °C.(07marks)

- (e) In a related investigation, the concentrations of carbon dioxide in air at different heights above the ground in a forest were found to vary over a period of 24 hours. Suggest an explanation for this finding. (08 marks)
- (f) Describe how microorganisms in a forest ecosystem make the carbon in a dead worm available to photosynthetic leaves of trees.

SECTION B (60 MARKS)

2. (a) What is meant by a codon?	(02 marks)
(b) Compare translation and transcription.	(08 marks)
(c)Describe the properties of DNA that:	
(i) Allow self-replication to take place.	(06 marks)
(ii)Suggest it is a suitable genetic material.	(04 marks)
3. (a)What is meant by artificial selection ?	(04 marks)
(b) Explain how polyploidy arises in sexually reproducing organisms.	(08 marks)
(c) Describe how polyploidy may lead to speciation.	(08 marks)
4. (a) Outline the various ways in which efficiency of receptors is ensured.	(07 marks)
(b)Explain the differences in acuity and sensitivity to light by different par	rts of the retina.
	(13 marks)
5. (a) How are plants adapted to reproduction on land?	(10 marks)

(b) Describe how female gametes are formed in dicotyledonous plants. (10 marks)

6.	(a)What is meant by a food chain ?	(04 marks)
	(b) Explain how energy flows through an ecosystem.	(08 marks)
	(C) How does temperature influence the distribution of organisms?	(10 marks)

END