

P530/2
BIOLOGY (Theory)
Paper 2
August, 2024
Time: 2½ Hours

ASSHU BUSHENYI DISTRICT MOCK EXAMINATIONS 2024
UGANDA ADVANCED CERTIFICATE OF EDUCATION.
BIOLOGY
(THEORY)
2 HOURS 30 MINUTES

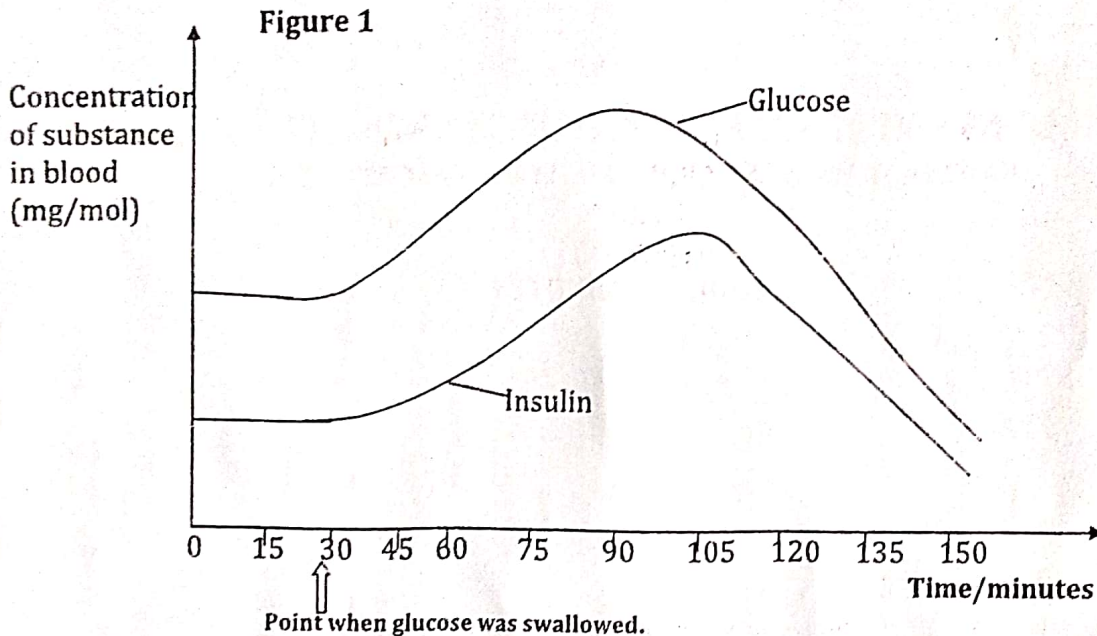
INSTRUCTIONS TO CANDIDATES:

- ❖ Answer question **ONE** in section A, plus **THREE** others from section B.
- ❖ Candidates are advised to read questions carefully, organize their answers and present them precisely and logically.
- ❖ Illustrate whenever necessary, with well labeled diagrams.

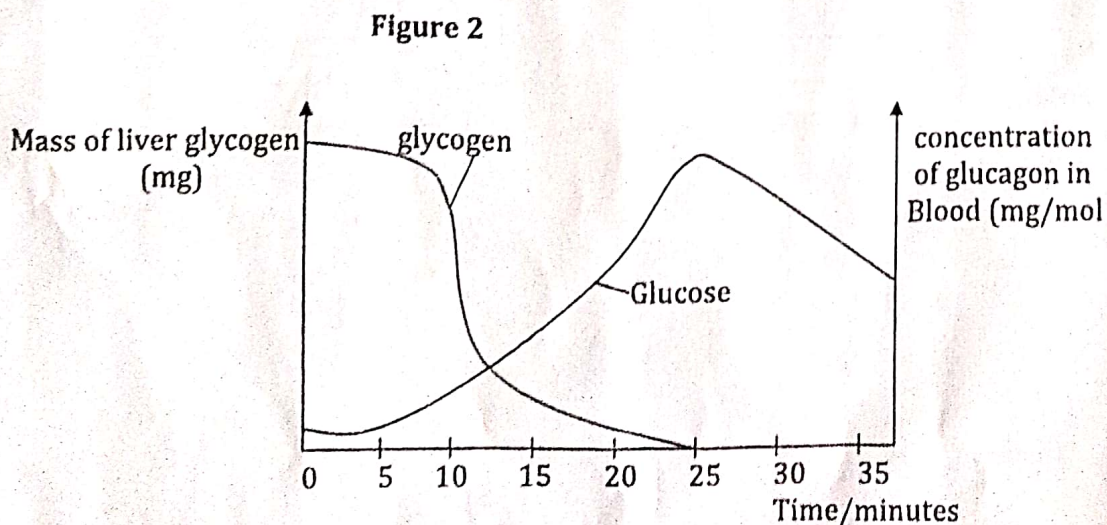
Question	Marks
SECTION A	
SECTION B	
No.	
No.	
No.	
Total	

SECTION A (40marks)
Compulsory question

1. Figure 1 below shows changes that occur in the concentrations of insulin and glucose in blood of an individual who had fasted overnight, and then swallowed 75g of glucose. Use it to answer questions that follow;



- (a) Compare the levels of glucose and insulin after swallowing glucose? (06marks)
- (b) Explain the changes in the concentration of;
 (i) Glucose (05marks)
 (ii) Insulin (05marks)
- (c) Explain how the concentration of insulin would change if the person engaged in an exercise? (04marks)
- (d) Figure 2 shows changes in the amount of liver glycogen and glucagon concentration in blood of an individual during prolonged exercise.



- (i) Describe the effects of prolonged exercise on the amount of glycogen and the concentration of glucose in blood? (04marks)
- (ii) Explain your description in (d)(i) above? (12marks)
- (e) Suggest how continuous supply of glucose is ensured after the 25th minute. (04marks)

SECTION B (60marks)
Attempt only 3 questions.

2. (a) Describe how a Carbondioxide molecule in the mesophyll cells of a C₃ plant can be converted to a triglyceride. (10marks)
- (b) Explain the physiological and ecological advantages C₄ plants have over C₃ plants. (06marks)
- (c) Explain the physiological significance of a chloroplast. (04marks)
3. (a) Define the term immunity? (01mark)
- (b) Describe how;
(i) the body reacts to a damaged blood vessel? (09marks)
(ii) the body reacts to presence of a foreign body in blood? (07marks)
- (c) Explain the consequences of over bleeding? (03marks)
4. (a) How do hormones in the brain and kidney interact to regulate the amount of water and salt in tissue fluid? (12marks)
- (b) Explain the operation of a hair pin current multiplier in the loop of Henle. (05marks)
- (c) State the significance of counter flow systems in homeostasis. (03marks)
5. (a) What is meant by the term organelle? (03marks)
- (b) Describe the structure of each of the following as seen in an electron microscope and indicate in each case how the structure is related to function.
(i) Golgi complex. (04marks)
(ii) Nucleus. (04marks)
(iii) Mitochondrion. (05marks)
- (c) What are the functions of ribosomes in a cell? (04marks)
6. (a) Compare the spores of a moss plant with the pollen grains of angiosperms? (13marks)
- (b) Explain how seed formation has led to evolutionary success in plants. (07marks)

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