

P530/2

BIOLOGY

OCT/NOV 2024

2 $\frac{1}{2}$ hours

UGANDA ADVANCED CERTIFICATE OF EDUCATION

ST. PETERS HIGH SCHOOL BUSABALA

END OF TERM III SENIOR FIVE 2024

BIOLOGY PAPER TWO

THEORY

NAME.....COMB.....

TIME 2 $\frac{1}{2}$ hours

INSTRUCTIONS TO CANDIDATES

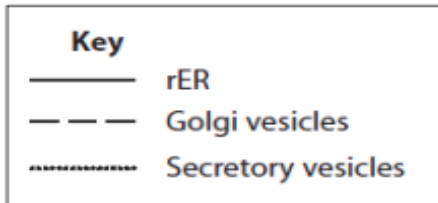
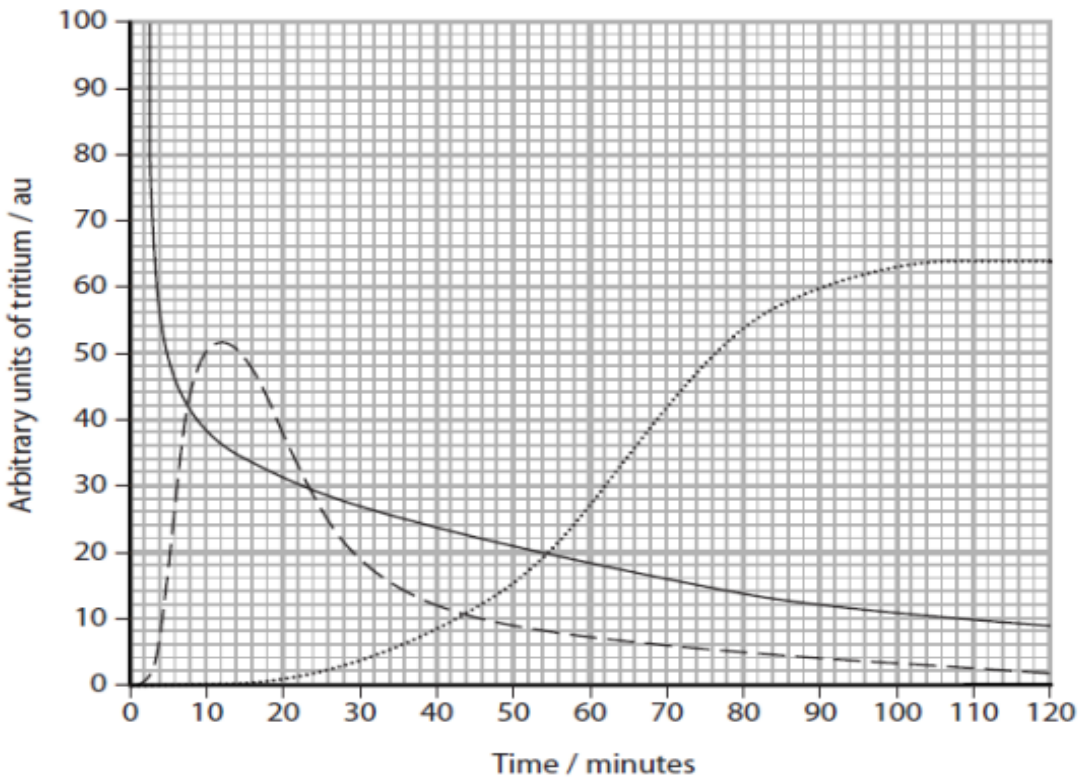
- ✓ *Answer question one in Section A plus any three questions in Section B.*
- ✓ *You are advised to read the questions carefully, prepare their responses, present them precisely and logically illustrating with well labeled diagrams where necessary.*
- ✓ *Start the answer to each question on a fresh page.*
- ✓ *Do not open this booklet until you are told to do so.*
- ✓ *Diagrams must be in pencil where used.*
- ✓ *Poor hand writing may lead to loss of marks.*
- ✓ *Avoid dirty work.*

SECTION A 40MARKS

Compulsory number

1. The pancreas is an organ in mammals that secretes enzymes and hormones. In an experiment, cells of the pancreas were provided with amino acids labeled with a radioactive element called tritium. The graph below shows the distribution of tritium within different organelles in the cells over a period of 120 minutes.

**BIOLOGY DEPARTMENT ST. PETERS HIGH SSEMATIMBA GODFREY
0756341741**



- a) Describe the variation on the distribution of tritium in;
 - i. Rough endoplasmic reticulum. (03marks)
 - ii. Golgi vesicles. (04marks)
 - iii. Secretory vesicles. (03marks)
- b) Account for the distribution of tritium in the three organelles (15marks)
- c) Explain why;
 - i. The cells of the pancreas were provided with amino acids. (03marks)
 - ii. Amino acids were labeled with tritium. (02marks)
- d) With evidence from the graph what is the route taken by enzymes after their synthesis in a mammalian cell. (04marks)
- e) Describe the structure of a Golgi complex in a mammalian cell. (06marks)

SECTION B 60MARKS

Attempt only three questions from this section.

2. a) Starch is a polysaccharide that exists in two forms; give a detailed comparison of the structures of starch. (08marks)
- b) Explain the properties of starch that make it a better storage compound. (12marks)
3. Relate the properties of water to its functions and state the biological or ecological importance of the stated functions. (20marks)
4. a) Describe the structure of the mitochondria. (08 marks)
- (b).How is the mitochondria structurally and physiologically modified to perform its functions? (09marks)
- (c).Explain why the mitochondria are regarded as semi-autonomous organelles (03marks).
5. a) Account for the distribution of epithelial tissues. (12marks)
- b) Using examples describe at least four types of exocrine glands basing on shape of the glandular tissue. (Use diagrams for description). (08marks)
6. a) Describe the structure of the areolar tissue. (09marks)
- b) Explain how the areolar tissue is modified to suit its functions. (08marks)
- c) State the classifications of the muscular tissue and state where each type may be found. (03marks)

Enjoy the study of life