P530/2 BIOLOGY PAPER 2 2¹/₂ hours March/April 2025



UGANDA ADVANCED CERTIFICATE OF EDUCATION

PRE-REGISTRATION EXAMINATIONS 2025

BIOLOGY

P530/2(THEORY)

TIME: 2HOURS 30MINUTES

INSTRUCTIONS TO CANDIDATES:

- \checkmark Answer question one in section A plus three others from section B.
- Candidates are advised to read the questions carefully,organize their answers and present them precisely and logically,illustrating with well labeled diagrams where ever necessary.
- ✓ Write on the answer sheet, your name, index number and the questions attempted in their order in the table below.

QUESTION	MARKS	
TOTAL		

TURN OVER

+256707270906

SECTION A (40 MARKS) (Compulsory)

1. (a)A team of scientists worked with the fusion yeast, <u>Schizosaccaromyces</u> <u>pombe</u>. They identified a gene in the yeast whose product of translation is a protein kinase in cells of the yeast as the cell cycle progressed. At each concentration of kinase, they determined the percentage of dividing cells. Their results are given in figure A below.



- i. Compare the changes in concentration of protein kinase and percentage of dividing cells with time. (10marks)
- ii. What conclusion(s) can you draw from the observed changes in concentration of kinases and percentage of dividing cells? (06marks)
- iii. According to the graph what is the significance of interphase in regulation of cell cycles? (07marks)

(b) A study was carried out to determine the distance between the centromeres of the chromosomes and poles of the cell, and the distance between centromeres of sister chromatids. The results are shown on the graph of figure B below.

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END 3