

UNIVERSITY EXAMINATIONS

1ST SEMESTER 2022/2023 ACADEMIC YEAR

SECOND YEAR EXAMINATION FOR THE DEGREE
BACHELOR OF SCIENCE (AGED)

BOTA 222: PLANT PHYSIOLOGY I

STREAM: R

TIME: 2 HRS

DAY: MONDAY [11.30AM – 13.30PM] DATE: 19/12/2022

THIS QUESTION PAPER CONSISTS OF THREE (3) PAGES

PLEASE DO NOT OPEN UNTIL THE INVIGILATOR SAYS SO.

INSTRUCTIONS: - Answer ALL questions in section A and any TWO questions in section B

SECTION A (40 marks)

QUESTION ONE

Draw the Fischer projection formula of any two hexoses. (5 marks)

QUESTION TWO

Draw the Haworth projection formula of glucose. (5 marks)

QUESTION THREE

List the amino acids with hydrophobic and aliphatic side groups. (5 marks)

QUESTION FOUR

Distinguish primary and tertiary structure of proteins. (5 marks)

QUESTION FIVE

Outline the classes of enzymes and the reactions they catalyse. (5 marks)

QUESTION SIX

List five carbohydrates found in sieve elements. (5 marks)

QUESTION SEVEN

List five coenzymes and their vitamin precursors. (5 marks)

QUESTION EIGHT

List five physiological effects of auxins. (5 marks)

SECTION B (30 marks)

QUESTION NINE

Explain how green plants harvest light energy. (15 marks)

QUESTION TEN

Describe isomerism in monosaccharide biology. (15 marks)

QUESTION ELEVEN

Describe CO₂ fixation in C₄ plants. (15 marks)