

UNIVERSITY EXAMINATIONS

FIRST SEMESTER 2025/2026 ACADEMIC YEAR

**SECOND YEAR EXAMINATION FOR THE DEGREE OF
BACHELOR OF AGRICULTURAL EDUCATION AND
EXTENSION**

BOT/BOTA 222: PLANT PHYSIOLOGY I

STREAM: R

TIME: 2 HRS

DAY: WEDNESDAY [8.30 – 10.30 A.M] DATE: 04/02/2026

THIS QUESTION PAPER CONSISTS OF TWO (2) 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**

Define the following terms

(5 Marks)

- i. Biomolecule
- ii. Chemiosmosis
- iii. Dormancy
- iv. Glycolysis
- v. Metabolome

QUESTION TWO

State the composition of three oligosaccharides found in plants

(6 Marks)

QUESTION THREE

List any **five** hydrophobic aliphatic amino acids found in plants

(5 Marks)

QUESTION FOUR

Outline the functions of lipids in plants

(4 Marks)

QUESTION FIVE

Outline the function of photosynthetic reaction centres and accessory pigments

(5 Marks)

QUESTION SIX

Distinguish DNA from RNA

(5 Marks)

QUESTION SEVEN

Outline the role of water in plant function

(5 Marks)

QUESTION EIGHT

List **three** glycolytic reactions

(6 Marks)

SECTION B (30 MARKS)**QUESTION NINE**

Illustrate non-cyclic photophosphorylation in green plants

(15 Marks)

QUESTION TEN

Discuss the physiological effects of cytokinins

(15 Marks)

QUESTION ELEVEN

Describe the classification of plant minerals according to biochemical function

(15 Marks)