

UNIVERSITY EXAMINATIONS

FIRST SEMESTER 2025/2026 ACADEMIC YEAR

**FOURTH YEAR EXAMINATION FOR THE DEGREES OF
BACHELOR OF EDUCATION (SCIENCE) AND BACHELOR
OF SCIENCE (GENERAL)**

BOTA 416: PLANT PHYSIOLOGY II

STREAM: R

TIME: 2 HRS

DAY: THURSDAY [14.30 – 16.30 P.M]

DATE: 29/01/2026

THIS QUESTION PAPER CONSISTS OF THREE (3) PAGES

PLEASE DO NOT OPEN UNTIL THE INVIGILATOR SAYS SO.

Answer all the questions in section A and any two questions in B

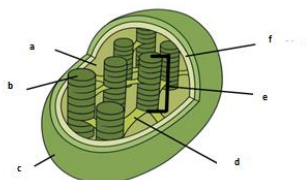
SECTION A (40 MARKS)

QUESTION ONE

Differentiate between light-dependent and light-independent reactions in photosynthesis. (5 Marks)

QUESTION TWO

Name parts a – f in chloroplast and state the functions of each part. (3 Marks)



QUESTION THREE

Illustrate the formation of a triglyceride during the process of photosynthesis. (4 Marks)

QUESTION FOUR

Outline any **four** (4) functions of chloroplast (4 Marks)

QUESTION FIVE

Explain the term photorespiration. (4 Marks)

QUESTION SIX

Outline the defining characteristics of chloroplasts. (4 Marks)

QUESTION SEVEN

Describe properties of light that are important for photosynthesis. (4 Marks)

QUESTION EIGHT

With reference to photosynthesis, describe the photoperiodism phenomenon in plants. (4 Marks)

QUESTION NINE

Explain the response of phytochrome system to red and far-red light in plants. (4 Marks)

QUESTION TEN

Outline any **four** (4) factors that affect photosynthesis.

(4 Marks)

SECTION B - ESSAY QUESTIONS; ANSWER ANY TWO QUESTIONS-30 MARKS

QUESTION ELEVEN

Describe the various modifications on plant parts for photosynthesis.

(15 Marks)

QUESTION TWELVE

Give a detailed account of the internal and external leaf structures that are involved in photosynthesis.

(15 Marks)

QUESTION THIRTEEN

Discuss the difference between cyclic and non-cyclic photophosphorylation.

(15 Marks)