TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF PURE & APPLIED SCIENCES

UNIVERSITY EXAMINATION FOR:

BACHELOR OF SCIENCE IN BIOCHEMISTRY

ABC 4306: PLANT BIOCHEMITRY II

END OF SEMESTER EXAMINATION

SERIES: DECEMBER 2024

TIME: 2 HOURS

DATE: Pick Date DECEMBER 2024

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of **FIVE** questions. Attempt question ONE (Compulsory) and any other TWO questions.

Do not write on the question paper.

Question ONE

a) Describe the reactions involved in de nova fatty acid synthesis (8 Marks)

b) Describe the occurrence and functions of Cuticle and Cutin (5 Marks)

c) Explain the Glyoxylate Cycle in Triacylglycerol Mobilization in Plants (5 Marks)

d) Outline the membrane-bound desaturases found in the chloroplasts (5 Marks)

e) Discuss the α-ketoacid elongation (α-KAE) pathway in de novo synthesis of fatty acid (6 Marks)

f) Give an outline the major lipids in plants (6 Marks)

Question TWO

Discuss the biosynthesis of the basic five-carbon unit of terpenoids **(20 Marks)**

Question THREE

a) Describe the oxylipin biosynthetic pathways in plants (8 Marks)

b) Explain the reasons as why lipids could be found in the phloem (12 Marks)

Question FOUR

Briefly describe the biosynthesis of plant membrane lipids (20 Marks)

Question FIVE

Consider the synthesis of lipids in plants

(a) Highlight the enzymes needed for the successive addition of C_2 units during biosynthesis of fatty acids in plants (4 Marks)

(b) Describe the structure and functions of lipids synthesized in plants (10 Marks)

(c) Outline the difference between the lipid metabolism (Anabolism and Catabolism) of plants and animals (6 Marks)