(*Knowledge for Development*)

KIBABII UNIVERSITY

UNIVERSITY EXAMINATIONS 2024/2025 ACADEMIC YEAR

FOURTH/THIRD YEAR FIRST SEMESTER MAIN EXAMINATION

FOR THE DEGREE OF BACHELOR OF SCIENCE (BIOLOGY) & BACHELOR OF EDUCATION SCIENCE

COURSE CODE: SBT 411/311

COURSE TITLE: PLANT BIOCHEMISTRY/BIOCHEMISTRY

DATE:23 - 01 - 2025 **TIME:11:00 - 1:00 PM**

INSTRUCTIONS TO CANDIDATES

Answer Question **ONE** and any other **TWO** Questions. Question one carries 30 marks, the other Questions carry 20 marks each.

TIME: 2 Hours

This paper consists of 2 printed pages. Please Turn Over

KIBU observes ZERO tolerance to examination cheating

QUESTION ONE

a) List four (4) types of photosynthates. (4 Marks)

b) Illustrate the role of starch synthase in starch biosynthesis. (4 Marks)

c) Distinguish between amylose and amylopectin. (4 Marks)

d) Describe the role of a keto acid in reductive amination. (4 Marks)

e) Outline functions of sulfur amino acids. (4 Marks)

f) Explain the polymer structure of suberin. (4 Marks)

g) List two enzymes in glutamate formation. (2 Marks)

h) Highlight key steps in Ethylene biosynthesis. (4 Marks)

QUESTION TWO

a) Describe the steps of glyoxylate cycle. (10 Marks)

b) Explain the role of glyoxylate cycle in plants. (10 Marks)

QUESTION THREE

a) Summarize functions of Terpenoids in plants. (10Marks)

b) Discuss classification of plant Terpenoids. (10 Marks)

QUESTION FOUR

a) Explain plant sterols biosynthesis pathways. (15 Marks)

b) Give roles of plant sterols. (5 Marks)

QUESTION FIVE

Discuss the focus of recent research in plant biochemistry. (20 Marks)