



*(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**

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**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. (10 Marks)
- 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)