



*(Knowledge for Development)*

**KIBABII UNIVERSITY**  
**UNIVERSITY EXAMINATIONS**  
**2020/2021 ACADEMIC YEAR**

**THIRD YEAR FIRST SEMESTER**  
**MAIN EXAMINATIONS**

**FOR THE DEGREE OF BACHELOR OF EDUCATION SCIENCE**

**COURSE CODE: SBT 311**

**COURSE TITLE: PLANT PHYSIOLOGY AND BIOCHEMISTRY**


**DATE: TUESDAY 13<sup>TH</sup> July, 2021. TIME: 2:00-4:00 P.M.**

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**INSTRUCTIONS TO CANDIDATES**

Answer Question one (1) and any other two (2) Questions. Question one is compulsory and carries 30 marks, the other Questions carry 20 marks each.

TIME: 2 Hours

This paper consists of 3 printed pages. Please Turn Over   
KIBU observes ZERO tolerance to examination cheating

### **QUESTION ONE (30 Marks)**

- a) Explain the following terms
- (i) Glycolysis
  - (ii) Root pressure
  - (iii) Turgor pressure
  - (iv) Light saturation point
  - (v) Guttation (5 marks)
- b) State and explain the significance of photosynthesis in plants (5 marks)
- c) Briefly explain how photorespiration limit photosynthesis in C<sub>3</sub> plants? (5 marks)
- d) Briefly describe the process of phloem unloading (5 marks)
- e) State the functions of any five endogenous plant hormones (5 marks)
- f) Differentiate between photosystem I and photosystem II light reaction in photosynthesis (5 marks)

### **QUESTION TWO (20 Marks)**

Describe the anatomy of the phloem and explain why it is an efficient transport system in plants

### **QUESTION THREE (20 Marks)**

Discuss the differences in the C<sub>3</sub>, C<sub>4</sub> and CAM photosynthesis and photorespiration processes.

**QUESTION FOUR (20 Marks)**

Describe the biochemical reactions in the matrix of the mitochondria during the Krebs cycle in plants.

**QUESTION FIVE (20 Marks)**

Discuss the factors that affect the process of photosynthesis