

**CHUKA**



**UNIVERSITY**

**SUPPLEMENTARY / SPECIAL EXAMINATIONS**

**FOURTH YEAR EXAMINATION FOR THE DEGREE IN BACHELOR OF SCIENCE**

**BOTA 474: PLANT PHYSIOLOGY II**

**STREAMS: BSC**

**TIME: 2 HOURS**

**DAY/DATE: WEDNESDAY 18/11/2020**

**5.00 P.M - 7.00 P.M.**

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**INSTRUCTIONS**

- Answer ALL questions in section A and any other Two in section B

**SECTION A (30 MARKS)**

1. Describe the ways in which plants may survive periods of water shortage (5 marks)
2. Discuss theories of stomatal movements in plants (5 marks)
3. Describe the balance between photosynthesis and respiration (5 marks)
4. Explain the mechanisms of active transport in plants (5 marks)
5. Discuss the factors that affect enzyme productivity in photosynthesis (5 marks)
6. Explain the metabolism process of nitrogen in plants (5 marks)

**SECTION B (40 MARKS)**

7. a. Discuss methods of measuring photosynthesis (10 marks)  
b. Discuss the rate limiting factors of net photosynthesis (10 marks)
8. a. Discuss the physiological characteristics that allow plants to grow in a wide range of environments (10 marks)  
b. Discuss the mechanisms by which plants increase the availability of mineral ions in the soil (10 marks)

9. a. Explain the various steps of photosynthetic light reactions (10 marks)  
b. Discuss the phases of Calvin cycle and product synthesis (10 marks)
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