

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

**EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN
BIOLOGY, AGRICULTURAL EDUCATION AND EDUCATION, WILDLIFE AND
BACHELOR OF EDUCATION (SCIENCE)**

BOTA 271: PLANT PHYSIOLOGY

STREAMS:

TIME: 2 HOURS

DAY/DATE: TUESDAY 23/03/2021

11.30 A.M – 1.30 P.M

INSTRUCTIONS:

Answer ALL the questions section A and any two in section B

SECTION A

1. State the roles of the following components in plant growth.
 - (i) Water [4 marks]
 - (ii) Amino acids [4 marks]
2. A study found out that cutting the above ground stems of cassava plants accompanied with watering for a week before harvesting produced sweeter cassava. Explain what caused this effect. [3 marks]
 - (b) Explain what is observed when salt is added to solutions containing soluble proteins. [2 marks]
3. Describe the classification of following plant components.
 - (i) Lipids [5 marks]
 - (ii) Enzymes [6 marks]
4. (a) State four functions of lipids in plants [4 marks]

- (b) Describe the mechanism of action enzymes [2 marks]

SECTION B

5. (a) Explain what happens to newly synthesized peptides in order to generate functional proteins in plant cells. [10 marks]
(b) Discuss the water potential concept in plants. [10 marks]
6. (a) Describe the pathways through which water flows in plants. [10 marks]
(b) Discuss the transport of materials through the phloem. [10 marks]
7. (a) Discuss mineral nutrition in plants. [10 marks]
(b) Describe four classes of plant hormones. [10 marks]
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