

CHUKA



UNIVERSITY

Knowledge is Wealth (*Sapientia divitia est*) Akili ni Mali

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BOTA 473 Plant Biochemistry

Instructions: Answer all questions in section A and any two in section B

Time: 2 hours

Section A

1. a. List the following:
 - i. Any two plant macromolecules (1 mark)
 - ii. Any two plant micromolecules (1 marks)
 - iii.
- b. Differentiate between an aldose and a ketose (2 marks)
2. a. state the function of any known monosaccharide found in plants (2 marks)
- b. With examples, differentiate between storage carbohydrates and structural carbohydrates in plants (4 marks)
3. Discuss the functions of lipids in plants (5 marks)
4. a. Differentiate between saturated and unsaturated fatty acids (2 marks)
- b. Explain the advantages of storing lipids in seeds instead of carbohydrates (3 marks)
5. Giving examples for each class, describe the classification of the amino acids that are found in plants. (5 marks)
6. a. State four functions of proteins in plants (2 marks)
- b. Describe the role of vitamins in plants (3 marks)

Section B

7. a. Discuss the reactions of the dark stage of photosynthesis (10 marks)
- b. Discuss the structural organization of proteins in plants (10 marks)
8. a. Analyzes the role of secondary metabolites in plants (10 marks)
- b. Discuss mineral nutrition in plants (10 marks)
9. Discuss the three principal stages of the nitrogen cycle (20 marks)