

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR
OF SCIENCE IN BIOLOGICAL SCIENCE

BOTA 473: PLANT BIOCHEMISTRY

STREAMS: BSC, BIO, BED (SCI)

TIME: 2 HOURS

DAY/DATE: MONDAY 09/12/2019

8.30 A.M. – 10.30 A.M.

INSTRUCTIONS: ANSWER ALL QUESTIONS IN SECTION A AND ANY TWO IN SECTION B

1. (a) List two carbohydrates that are synthesized in plants but not in animals. [2 marks]
(b) Name the polysaccharides that have the following bonds [3 marks]
 - (i) 1 – 4, glycosidic bonds
 - (ii) 1 – 6 glycoside bonds
 - (iii) 1 – 3 glycosidic bonds
2. State the roles of alkaloids in plants [4 marks]
3. (a) State four functions of cellulose in plants [4 marks]
(b) Describe the synthesis of cellulose in cells [5 marks]
4. List three groups of lipids that are found on plant cell membranes [3 marks]
5. State role of vitamins in plants [4 marks]
6. Name five classes of amino acid based on their R groups [5 marks]

SECTION B

7. Discuss the process of protein synthesis from amino acids in plants [20 marks]
8. Discuss nitrogen fixation in plants [20 marks]
9. Discuss the structure and metabolism of lipids in plants [20 marks]

