

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

**SECOND YEAR EXAMINATION FOR THE AWARD OF DEGREE
OF BACHELOR OF SCIENCE IN BIO & BACHELOR OF SCIENCE
(CHEMISTRY)**

BOTA 271/202: PLANT PHYSIOLOGY I

STREAMS: BSC (BIO) BSC (CHEM)

TIME: 2 HOURS

DAY/DATE: MONDAY 15/4/2019

8.30 A.M. – 10.30 A.M.

INSTRUCTIONS: Answer ALL questions in section A and TWO questions in section B

SECTION A (30 MARKS)

1. (a) List four importance of diffusion in plants [2 marks]
(b) Illustrate the cyclization of D-fructose to give 3, D- fructofuranose [3 marks]
2. (a) Distinguish between saturated and unsaturated fatty acids [2 marks]
(b) Explain three effects of Abscisic acid on plant growth and development [3 marks]
3. (a) Explain three different pathways through which water flow from epidermis to endodermis in a plant root [3 marks]
(b) Discuss the effect diffusion pressure gradient on the rate of diffusion [2 marks]
4. (a) List two changes that occur in a plant cell due to endosmosis [2 marks]
(b) Explain three events that occurs when a pigment absorbs light energy [3 marks]
5. (a) Explain three factors that control the availability of phosphorus in plants [3 marks]
(b) Photosynthesis is a redox process. Explain [2 marks]
6. (a) Explain three external factors that affect absorption of water in plants [3 marks]

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- (b) Describe the effect of neutral salts on reactivity of proteins in plant metabolism

[2

marks]

SECTION B: 40 MARKS

7. Explain the process of dark reactions of photosynthesis [20 marks]
8. Discuss factors that influence enzyme controlled activities [20 marks]
9. Discuss classification of simple carbohydrates [20 marks]
