

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURE, BACHELOR OF SCIENCE IN HORTICULTURE, BACHELOR OF SCIENCE IN WILDLIFE AND BACHELOR OF SCIENCE IN NATURAL RESOURCES

BOTA 271/202: PLANT PHYSIOLOGY I

STREAMS:

TIME: 2 HOURS

DAY/DATE: THURSDAY 13/12/2018

11.30 A.M – 1.30 P.M

INSTRUCTIONS:

- **This paper contains seven questions**
- **Answer all questions in section A and any other two in section B**

SECTION A (30 MARKS) ANSWER ALL QUESTIONS IN THIS SECTION

- (a) Distinguish between aldoses and ketoses giving an example in each case. [3 marks]
 - (b) Explain how diffusion pressure gradient affects the rate of diffusion. [2 marks]
 - (c) List two changes that occur in a plant cell due to endosmosis. [2 marks]
 - (d) Explain three different pathways through which water flow from epidermis to endodermis in a plant root. [3 marks]
- (a) Describe two importances of diffusion in plants. [2 marks]
 - (b) State three nutritional uses of lipids. [3 marks]
 - (c) Illustrate the cyclization of D-fructose to give 3 -D-fructofuranose. [3 marks]
 - (d) Distinguish between saturated and unsaturated fatty acids. [2 marks]
- (a) Explain three external factors that affect absorption of water in plants. [3 marks]
 - (b) Using a diagram, show three major tissues found in plant organs. [3 marks]
 - (c) How do neutral salts influence reactivity of proteins in plant metabolism? [2 marks]
 - (d) Describe deficiency symptoms in plant due to lack of potassium ions. [2 marks]

SECTION B (40 MARKS) ANSWER ONLY TWO QUESTIONS IN THIS SECTION

4. Explain the light and dark reactions of photosynthesis. [20 marks]
 5. Discuss factors that influence enzyme controlled activities. [20 marks]
 6. Discuss the glycolytic (EMP) pathway showing synthesis of two ATP molecules and pyruvic acid. [20 marks]
-