CHUKA  **UNIVERSITY**

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN

AGRI 211: CROP ENVIRONMENTAL PHYSIOLOGY

STREAMS: BSC AGEC Y2S1 **TIME: 2 HOURS**

DAY/DATE: THURSDAY 06/12/2018 **2.30 P.M – 4.30 P.M**

INSTRUCTIONS

- **Answer all questions in section A and any two in section B**

SECTION A: ANSWER ALL QUESTIONS

1. (a) Explain six important benefits of osmosis in plants [6 marks]
   (b) Explain the significance of ambition in crop physiology. [3 marks]
2. (a) Explain three types of antitranspirants. [6 marks]
   (b) Outline the basic features of an ideal antitranspirant. [3 marks]
3. Explain the light –dependent and the Calvin cycle reactions in photosynthesis. [8 marks]
4. Explain the significance of translocation of organic solutes in plants. [4 marks]

SECTION B (40 MARKS) ;ANSWER TWO QUESTIONS

5. (a) Explain the significance of diffusion . [3 marks]
   (b) Explain the external and internal factors affecting absorption of water. [7 marks]
   (c) Explain the main contrasts between active and passive water absorption. [10 marks]
6. You have been requested to make a presentation on the conduction of food materials in the plant during a farmers field day in Ndagani . Discuss the existing evidence to prove that the phloem tissue is responsible for this translocation. [14 marks]
   (b) Outline the three forms of transpiration and explain the five types of stomata based on the behavior of the stomatal movements. [6 marks]

7. (a) Explain ten general mineral deficiency symptoms that commonly develop in plants. [10 marks]

(b) Explain ten leaf structural features that influence the rate of transpiration. [10 marks]
