**MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY**

**P.O. Box 972-60200 – Meru-Kenya**

**Tel: 020-2069349, 061-2309217. 064-30320 Cell phone: +254 712524293, +254 789151411**

**Fax: 064-30321**

**Website:** [**www.must.ac.ke**](http://www.must.ac.ke) **Email:** **info@must.ac.ke**

**University Examinations 2015/2016**

FIRST YEAR SECOND SEMESTER EXAMINATION FOR DIPLOMA/CERTIFICATE

IN

AGRICULTURE

**BIO 0113: PLANT PHYSIOLOGY**

**DATE: AUGUST 2016 TIME: 1 ½ HOURS**

**INSTRUCTIONS:** *Answer question* ***one*** *and any other* ***two***questions.

**QUESTION ONE – (30 MARKS)**

1. Explain the effects of lowering temperatures in the roots of the plants. (2 marks)
2. What is transpiration ratio? (1 mark)
3. State three examples of macro-elements required by plants. (3 marks)
4. Briefly explain the photosynthetic theory. (5 marks)
5. Compare and contrast C3 and C4 plants. (5 marks)
6. Describe the three major pathways through which water flows from the epidermis to the endodermis in plants. (6 marks)
7. What is cell wall acidification (2 marks)
8. Differentiate between growth and development (2 marks)
9. State and explain two mechanisms that aid in water uptake in plants. (4 marks)

**QUESTION TWO (15 MARKS)**

1. State the effect of abscisic acid (ABA) on plant during water stress. (3 marks)
2. Outline the symptoms of excess nitrogen in plants. (4 marks)
3. Discuss the factors that affect water and mineral element absorption by plants. (8 marks)

**QUESTION THREE (15 MARKS)**

Describe how water and mineral salts move from soil until they reach the leaves in a tall plant.

(15 marks)

**QUESTION FOUR (15 MARKS)**

1. Discuss physiological effects of gibberllins on plants. (5 marks)
2. Describe various forces involved in the ascent of water and mineral salts in a plant. (10 marks)