

**MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY**

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**University Examinations 2016/2017**

FIRST YEAR, SECOND SEMESTER EXAMINATION FOR CERTIFICATE IN AGRICULTURE.

**BIO 0113: PLANT PHYSIOLOGY**

**DATE: DECEMBER, 2016 TIME: 11/2 HOURS**

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

**QUESTION ONE (30 MARKS)**

1. Distinguish between differentiation and specialization of plant cells in growth and development. (4 marks)
2. State the difference between C3 and C4 plants. (5 marks)
3. Differentiate between apoplast and symplast. (2 marks)
4. List three basic activities that are involved in growth of plants. (3 marks)
5. Explain the effect of excess water in plants. (4 marks)
6. Explain the following factors how they affect photosynthesis; (8 marks)
7. Photoperiod
8. Age of leaf
9. Explain the importance of plant physiology in agriculture. (4 marks)

**QUESTION TWO (15 MARKS)**

Describe with illustration the process of photosynthesis in green plant. (15 marks)

**QUESTION THREE (15 MARKS)**

1. Describe the importance of water to living organisms. (6 marks)
2. Explain the factors that affect chemical potential of water. (9 marks)

**QUESTION FOUR (15 MARKS)**

Explain starch-sugar theory of stomatal opening. (15 marks)

**QUESTION FIVE (15 MARKS)**

Describe various plant regulators and state their effects on plant growth. (15 marks)