



MERU UNIVERSITY COLLEGE OF SCIENCE & TECHNOLOGY

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University Examinations 2012/2013

FIRST YEAR, SECOND SEMESTER EXAMINATION FOR CERTIFICATE/DIPLOMA IN
AGRICULTURE AND FIRST YEAR, FIRST SEMESTER FOR DIPLOMA IN AGRICULTURAL
EDUCATION AND EXTENSION

BIO 0113: PLANT PHYSIOLOGY

DATE: DECEMBER 2012

TIME: 1 ½ HOURS

INSTRUCTIONS: Answer question **ONE** and any other **TWO** questions

QUESTION ONE – 30 MARKS

- (a) Explain the importance of Plant Physiology (4Marks)
- (b) State three functions of water in plants. (3Marks)
- (c) Give the functions of the following plant organelles
- (i) Cell wall
 - (ii) Vacuole (4Marks)
- (d) Describe the functions of cytokinins in growth and development of plants. (5Marks)
- (e) Define the following terms:
- (i) Field capacity
 - (ii) Permanent wilting point (4Marks)
- (f) Outline the effect of nitrogen deficiency in plants. (3Marks)
- (g) What is growth? (2Marks)
- (h) Discuss the factors that affect transpiration in plants. (5Marks)

QUESTION TWO – 15 MARKS

- (a) Explain the correlation of respiration and photosynthesis in plants. (4Marks)
- (b) Describe the function of Osmosis process in plant. (5Marks)
- (c) Explain three types of meristems responsible for plant growth. (6Marks)

QUESTION THREE – 15 MARKS

Discuss three limiting factors of Photosynthesis. (15Marks)

QUESTION FOUR – 15 MARKS

(a) Discuss the importance of gibberellic acid hormone in crop productivity (10Marks)

(b) Describe the movement of organic compounds in the plant. (5Marks)

QUESTION FIVE – 15 MARKS

(a) Discuss three properties of water that make it most essential in plant processes. (10Marks)

(b) Define the term Osmosis. (2Marks)

(c) State the function of phosphorus mineral element in plants. (3Marks)