



# MACHAKOS UNIVERSITY COLLEGE

(A Constituent College of Kenyatta University)  
University Examinations for 2015/2016 Academic Year

SCHOOL OF AGRICULTURE & NATURAL RESOURCES

DEPARTMENT OF AGRICULTURE

SECOND SEMESTER EXAMINATION FOR DIPLOMA IN AGRICULTURAL EDUCATION  
AND EXTENSION

**KSH 0111: PRINCIPLES AND PRACTICES OF HORTICULTURE THEORY**

**Date: 7/12/2015**

**Time: 8:30 – 10:30 AM**

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**INSTRUCTIONS:**

*Answer Question One and Two Other Questions.*

**QUESTION ONE**

- a). Define the following terminologies:
- i. Soil amendments (2 marks)
  - ii. Vegetative propagation (2 marks)
  - iii. Fertigation (2 marks)
  - iv. Permanent wilting percentage (2 marks)
  - v. Field capacity (2 marks)
- b) List two plant growth structures used in horticultural crop production (2 marks)
- c) State 2 advantages of growing plants in plant growth structures (2 marks)
- d) Explain any two ways in which temperature affects the processes of transpiration (2 marks)
- e) Explain why seed germination is primarily a food utilization process (2 marks)
- f) Outline four important processes going on in seeds during germination (4 marks)
- g) Give two reasons why saturated soils may retard germination of vegetable and flower crop seeds (2 marks)

- h) Explain why leaves are necessary for the production of roots in herbaceous and softwood cuttings (2 marks)
- i). Explain any two factors that contribute towards minimizing post harvest losses (2 marks)
- j). Explain any two factors dealing with formation of suberin in vegetative propagation (2 marks)

## **QUESTION TWO**

Answer the following questions:

- (a) State four functions of water and two functions of oxygen during seed germination. (6 marks)
- (b) Discuss five factors influencing germination. (10 marks)
- (c) Explain at least four reasons why seeds of many fruits and ornamentals require a rest period before they can germinate. (4 marks)

## **QUESTION THREE**

- (a) Explain any five biotic and abiotic factors that influence plant growth and development. (10 marks)
- (b) Explain any five cultural practices influencing plant growth and development (10 marks)

## **QUESTION FOUR**

- (a) State four reasons why vegetative propagation is practiced (4 marks)
- (b) Explain the importance of cambium tissues in vegetative propagation (1 mark)
- (c) Explain two ways of minimizing transpiration in development of young cuttings (2 marks)
- (d) Explain why in hardwood cuttings the basal cut should be made below the nodes (1 mark)
- (e) State four kinds of layering (4 marks)
- (f) Discuss four reasons for grafting (8 marks)

## **QUESTION FIVE**

Discuss five primary and five secondary causes of post harvest losses in fruits and vegetables. (20 marks)