



EMBU UNIVERSITY COLLEGE

(A Constituent College of the University of Nairobi)

2015/2016 ACADEMIC YEAR

SECOND SEMESTER EXAMINATION

SECOND YEAR EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE
(HORTICULTURE)

ACH 201: NURSERY MANAGEMENT

DATE: APRIL 7, 2016

TIME: 08:30-10:30AM

INSTRUCTIONS:

Answer Question ONE and ANY Other TWO Questions

QUESTION ONE

- a) Define the following terms as used in the nursery or in a greenhouse
- i) Pad Cooling (1 Mark)
 - ii) Root zone heating (1 Mark)
 - iii) Seed dormancy (1 Mark)
- b) Explain how soil texture can be improved. (3 Marks)
- c) Discuss light management in propagation of cuttings. (4 Marks)
- d) Outline three (3) practices carried out in the nursery to harden the seedlings before field establishment. (3 Marks)
- e) Distinguish between seed scarification and seed stratification. (4 Marks)

- f) Explain how concentration of bicarbonates in irrigation water increases the soil pH. (3 Marks)
- g) Outline the advantages of starting plants in plug trays instead of ground beds. (4 Marks)
- h) You have been tasked by Embu University Management to establish a commercial tree nursery within the university. Discuss the economic considerations that you would take into account in deciding the best place to locate this nursery (6 Marks)

QUESTION TWO

- a) Using a schematic diagram, illustrate the pattern of plant and material movement in the nursery. (10 Marks)
- b) Outline ten common symptoms of graft incompatibility. (10 Marks)

QUESTION THREE

- a) You are provided with an empty potting container with drainage holes, a heap of dry soil and water. Demonstrate how you would go ahead calculating the total porosity, aeration porosity and water holding capacity of the soil. (8 Marks)
- b) Outline the general advantages and disadvantages of soilless culture (hydroponics) in crop production. (12 Marks)

QUESTION FOUR

- a) Explain why vermiculite should be mixed with other media to give the best results. (3 Marks)
- b) Outline the scenarios where grafting and budding are superior to other propagation methods. (7 Marks)
- c) Assume you are a County Agricultural Officer, you are presented with a bunch of seeds of doubtful quality and requested to conduct a germination test to ascertain the quality. Discuss the procedure you would follow when carrying out this task. (10 Marks)

QUESTION FIVE

a) Explain the importance of checking the soil pH before planting. (6 Marks)

b) Discuss the symptoms, causal agents and predisposing factors of damping-off. (6 Marks)

c) You are provided with the following information about a coffee seedling nursery stages:

- i) Germination – 1 month after sowing
- ii) Transplanting into polybags – 2 weeks after germination
- iii) Grafting – 6 months after transplanting
- iv) Graft healing – 1 month

Prepare a nursery calendar that will ensure well hardened grafted coffee seedlings for March/April planting season. (8 Marks)

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