



UNIVERSITY OF EMBU

2019/2020 ACADEMIC YEAR

SUPPLEMENTARY/SPECIAL EXAMINATIONS

SECOND YEAR EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN
HORTICULTURE

ACH 201: NURSERY MANAGEMENT

DATE: OCTOBER 26, 2020

TIME: 8:30 AM – 10:30 AM

INSTRUCTIONS:

Answer Question ONE and ANY Other TWO Questions.

QUESTION ONE (30 MARKS)

- a) Distinguish between seed dormancy and seed viability (2 marks)
- b) Highlight the importance of thinning in the nursery (3 marks)
- c) Explain the importance of controlling soil temperature in nursery management (2 marks)
- d) State the four physical properties of a substrate that affect plant growth (4 marks)
- e) Outline the reasons why fresh pine bark is not recommended as a component of a potting mix (3 marks)
- f) Distinguish between soil sterilization and soil pasteurization (4 marks)
- g) Discuss the similarities and differences between hot frames and cold frames (4marks)
- h) A soil sample has a plastic limit of 12. If its plasticity index is 5. Calculate its liquid limit. (2 marks)



ISO 27001:2013 Certified

Knowledge Transforms



ISO 9001:2015 Certified

- i) You have been tasked by the management of University of Embu to establish a commercial tree nursery within the university. Choose the most appropriate site for the nursery and justify your choice (6 marks)

QUESTION TWO (20 MARKS)

- a) Explain how you can lengthen the day for long day stock plants in a greenhouse (4 marks)
- b) Outline six (6) advantages of budding as compared to grafting (6 marks)
- c) Assume you are employed as a seed testing officer at KEPHIS. Develop a simple laboratory procedure for testing the viability of seeds (10 marks)

QUESTION THREE (20 MARKS)

- a) Outline the characteristics of an ideal potting medium (9 marks)
- b) 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 (11 marks)

QUESTION FOUR (20 MARKS)

- a) Assume that after graduating from the University you are offered a job as a propagation manager by a newly established Macadamia nursery. Develop a pattern of plant and material movement in the nursery. (12 marks)
- b) Outline four (4) advantages and four (4) disadvantages of asexual propagation (8 marks)

QUESTION FIVE (20 MARKS)

- a) Outline the general advantages and disadvantages of soilless culture (hydroponics) in crop production (12 marks)
- b) State the symptoms of graft incompatibility (8 marks)

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