



1ST SEM. 2013/2014

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UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

PROGRAMME: BACHELOR OF SCIENCE IN HORTICULTURE
YEAR IV

COURSE CODE: HORT 404

TITLE OF PAPER: TEMPERATE FRUIT AND NUT PRODUCTION

TIME ALLOWED: TWO [2] HOURS

INSTRUCTIONS: ANSWER ANY FOUR (4) QUESTIONS

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INVIGILATOR**

INSTRUCTIONS: ANSWER ANY FOUR (4) QUESTIONS

QUESTION 1

Discuss the production of apple (*Malus domestica* L.) using the following guidelines:

- a) Climatic requirements (12 marks)
- b) Soils (3 marks)
- c) Irrigation (10 marks)

[25 marks]

QUESTION 2

Provide guideline for the production of pecan nuts (*Carya illinoensis* L.) under the following:

- a) Climate (15 marks)
- b) Soils (8 marks)
- c) Bearing age (2 marks)

[25 marks]

QUESTION 3

Describe the following methods of determining the chilling requirements of various temperate fruits:

- a) Utah chill method (9 marks)
- b) Daily positive Utah chill unit model (PCU) (4 marks)
- c) Dynamic model (12 marks)

[25 marks]

INSTRUCTIONS: ANSWER ANY FOUR (4) QUESTIONS

QUESTION 4

- a) What is the objective of training young fruit trees? (3 marks)
- b) What are the outcomes of pruning young trees? (13 marks)
- c) Outline the principles to follow when pruning a tree at any age (9 marks)

[25 marks]

QUESTION 5

- a) What is the importance of sufficient chilling accumulation in temperate fruits? (10 marks)
- b) Discuss the physiological symptoms associated with insufficient chilling as follows:
 - i) delayed foliation (5 marks)
 - ii) reduced fruit set and increased buttoning (5 marks)
 - iii) reduced fruit quality (5 marks)

[25 marks]