

UNIVERSITY OF KWAZULU-NATAL

**SCHOOL OF AGRICULTURAL, EARTH & ENVIRONMENTAL SCIENCES
DISCIPLINE OF HORTICULTURAL SCIENCE**

EXAMINATION: JUNE/JULY 2013

SUBJECT, COURSE & CODE: Orchard management (AGPS 307)

DURATION: 3 HOURS

TOTAL MARKS: 100

External Examiner: Dr. Mduduzi Ngcobo

Internal Examiner: Dr. Samson Tesfay

NOTE: THIS PAPER CONSISTS OF THREE (3) PAGES, PLEASE SEE THAT YOU HAVE THEM ALL.

ANSWER ALL QUESTIONS.

1. Orchard is a long term investment and this also requires a very critical planning. If you are in a position to select a growing site for orchard establishment, discuss the factors you would definitely take into consideration.

[10]

2. Discuss climate, chilling units, bud dormancy in relation to orchard site selection, orchard establishment and management. (Hint: chilling versus cultivar selection) (15 points).

[10]

3. The orchard management mainly touches different strategic agricultural management practices in order to able to produce quality fruit with optimum yield. This has a main effect to fruit postharvest quality. Orchard sustainability relies on the appropriate postharvest technology.

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In contrast, explain the consequences in fruit quality due to inappropriate postharvest handling.

[10]

4. Briefly define climate models that are used to calculate chilling requirement.

[10]

5. There are different types of bud dormancies, they occur progressively to break bud dormancy in response to chilling requirements before flowering. List and explain the different types of dormancies.

[10]

6. Mention the two strategic decision making tools for fertilization as a prerequisite in orchard fertilizer management.

[10]

7. Discuss the different goals of orchard floor management.

[10]

8. Briefly define the following terms

A. Irrigation scheduling

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- B. Gravimetric soil water measurement
- C. Field capacity
- D. Permanent wilting point
- E. Fertigation

[5x2]

9. Compare and contrast fruit maturity in relation to fruit harvesting time as it affects postharvest fruit quality.

[10]

10. Discuss and illustrate the key physiological processes during the fruit postharvest life.

[10]