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University Examinations 2015/2016

THIRD YEAR FIRST SEMESTER EXAMINATION FOR THE DEGREE OF
BACHELOR OF SCIENCE IN HORTICULTURE

AHS 2301: TROPICAL AND SUB-TROPICAL FRUIT PRODUCTION

DATE: NOVEMBER 2015

TIME: 2 HOURS

INSTRUCTIONS: Answer question *one* and any other *two* questions

QUESTION ONE (30 MARKS)

- a) Most of tropical fruits are perennial thus requires adequate planning before establishing an Orchard. Other than climate and ecological factors, discuss six factors that should be considered in the planning and Orchard establishment (18 Marks)
- b) Outline four reasons why pruning is done on mango plant (4 Marks)
- c) Giving examples, distinguish the following terms;
- i) Primary and secondary plant nutrients (2 Marks)
 - ii) Mulching and groundcover crop (2 Marks)
 - iii) Horticultural maturity and physiological maturity (2 Marks)
 - iv) Food safety standards and marker requirements (2 Marks)

QUESTION TWO (20 MARKS)

- a) Mr. Clive a farmer in one of the Counties in Kenya has come to consult you on fruit production
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- i) What challenges is he likely to encounter in his fruit production endeavours? (5 Marks)
- ii) If he was to introduce a new variety of mango, what key characteristics would he consider in the selection of rootstock? (5 Marks)
- iii) What principles can he employ in management of diseases in the Orchard. (5 Marks)
- iv) There have been allegations that the land he intends to establish the Orchard is infertile. As a pomologist, what prerequisite action should he take before prescribing nutrients application? (5 Marks)

QUESTION THREE (20 MARKS)

- a) In the process of domesticating, selecting and subsequent distribution of cultivars of X and Z fruit tree species from Kijenge hills, X has been successfully taken up for both domestic and export market.
 - i) What factors might have led to the success of X? (5 Marks)
 - ii) The exporter is concerned about declining sweetness, small size and decolouration of the fruits. What are the possible cause and the remedies? (10 Marks)
 - iii) Discuss fruit ripening. (5 Marks)

QUESTION FIVE (20 MARKS)

- a) Discuss four ecological and climatic factors considered when planning and establishing an Orchard. (10 Marks)
- b) Discuss flowering synchronization and induction in mangoes trees (10 Marks)