



**MASENO UNIVERSITY**  
**UNIVERSITY EXAMINATIONS 2016/2017**

**THIRD YEAR SECOND SEMESTER EXAMINATIONS FOR THE  
DEGREE OF BACHELOR OF SCIENCE IN HORTICULTURE WITH  
INFORMATION TECHNOLOGY**

**MAIN CAMPUS**

**AHC 305: POMOLOGY I**

Date: 8<sup>th</sup> June, 2017

Time: 12.00 - 3.00 pm

---

**INSTRUCTIONS:**

- Answer ALL the questions in SECTION A and ANY TWO questions from SECTION B.



## AHC 305: POMOLOGY I

**INSTRUCTIONS:** Answer **ALL** questions in section **A** and any other **TWO** questions from section **B**.

---

### SECTION A (40 MARKS)

**Q1. (a)** Outline the challenges faced in the production of temperate fruit crops under tropical conditions and the measures that have been taken to address these challenges (3 marks)

**(b)** Fertilizers should be applied to fruit orchards with moderation. Justify this statement with respect to nitrogenous fertilizers in Apple production (3 marks)

**(c)** Growth degree day phenomenon has been used in crop growth and developmental studies. Discuss the possible challenges to this phenomenon (5 marks)

**Q2. (a)** As an aspiring member of the County Assembly of Nyeri County, you have a manifesto which encompasses agricultural production as one of the economic blue prints. Discuss fruit production as a choice for rapid economic development (5 marks)

**(b)** The performance of fruit crops is dependent on both genetic and environmental factors. Discuss the tropical climatic zones with respect to fruit crop production (4 marks)

---

(c) Describe the basis and significance of seedlessness as often observed in certain fruit crops (4 marks)

Q3. (a) Low temperature conditions are essential for certain developmental processes in temperate fruit trees. Discuss the possible side effects of very low temperatures in fruit plant development (5 marks)

(b) Discuss the importance of temperature as an environmental factor in the physiological processes of fruit crops (5 marks)

(c) Outline the basis for the application of water to an established orchard (3 marks)

(d) Sprinkler irrigation has been popularly used in most fruit orchards. Outline the merits and demerits of this irrigation method (3 marks)

#### SECTION B (30 MARKS)

Q4. (a) Strawberry production has been gaining popularity even among small scale farmers. Describe the propagation and field establishment of this crop for purposes of good quality and yields (10 marks)

(b) Proper framework formation is essential for adequate production of fruit crops. Describe the procedure of its attainment in *Malus domestica* (5 marks)

Q5. Discuss fruit plant's architectural manipulation as a key management procedure for the attainment of quality and yield (15 marks)

Q6. Ecological factors and agronomic practices greatly influence the growth and yield of fruit crops. Describe the ecological requirements, propagation and field establishment of Grapes (15 marks)