



EMBU UNIVERSITY COLLEGE
(A Constituent College of the University of Nairobi)

2015/2016 ACADEMIC YEAR

SECOND SEMESTER EXAMINATION

THIRD YEAR EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE

(AGRICULTURE)

ACS 308: HORTICULTURAL CROPS

DATE: APRIL 11, 2016

TIME: 8:30-10:30

INSTRUCTIONS:

Answer Question ONE and ANY Other TWO Questions

QUESTION ONE

- a) What is the origin (etymology) of the word 'horticulture'? (2 Marks)
- b) Horticulture has evolved over time to include many non-food crops. Highlight **five (5)** of these groups, and give one crop example for each. (5 Marks)
- c) In the recent past, cut flowers have surpassed coffee and tourism in foreign exchange earnings in Kenya, to remain second only to tea. Briefly explain why this fast growth in the sub-sector has been realized. (5 Marks)
- d) Outline the **three (3)** Mendelian laws of inheritance applied to date on breeding horticultural crops for increased production. (3 Marks)
- e) Briefly describe **five (5)** major biotic factors that influence horticultural crop performance parameters, such as yields. (5 Marks)
- f) Briefly describe **five (5)** phenotypic horticultural crop produce attributes that significantly contribute to the overall crop performance. Give a practical example for each. (5 Marks)

g) In your own words, and with **five (5)** pointers, describe the contribution of horticultural crops to the general welfare of mankind. (5 Marks)

QUESTION TWO

a) Organic farming has been acclaimed as the best method for horticultural production of wholesome food stuff that is free of harmful pesticide residues and other chemicals. This has pushed up the market demand and prices for organic produce, yet the production is yet to meet this demand. Why is this scenario, especially in Kenya? (10 Marks)

b) Apart from the economic contribution, horticulture plays a major role in the Global nutritional food security. One may even argue that human beings can survive on horticultural foods only. Discuss. (10 Marks)

QUESTION THREE

Upon graduating from Embu University College (EUC), the Government of Kenya allocates you an acre of land as part of youth empowerment programme. Describe how you would utilize this piece of land for profit maximization, employing the knowledge you have gained at EUC.

(20 Marks)

QUESTION FOUR

a) Asexual propagation is a common practice in horticultural production systems. With the aid of a few diagrams, describe **five (5)** methods of asexual crop propagation.

(10 Marks)

b) Describe **five (5)** common cultural practices specific to most horticultural crop production, for improved quality and quantity of produce. Give a crop example for each practice.

(10 Marks)

QUESTION FIVE

Major strides have been made in biotechnology, that help shorten plant breeding processes for crop improvement (such as drought resistance for production in the semi-arid areas), yet we have not seen a matching improvement in production parameters for key food crops. What are the technical reasons for this worrying trend? Suggest possible solutions for each challenge faced.

(20 Marks)

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