

Uganda Martyrs University

Faculty of Agriculture

B. Agriculture II Semester II Final Assessment: 2017/2018

Course Unit: CRE 2104: Perennial Crops Agronomy

Time: 09:30 am – 12:30 pm

Date: Monday 7th May, 2018

Instructions:

- i. Attempt **ALL** questions in section A, plus any other **TWO** questions from section B.
 - ii. Each question is 25 marks
 - iii. *Do not write anything on a question paper*
 - iv. Time: Three hours
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SECTION A: Attempt all questions in this section.

Question 1:

Mrs. Anna Kayiwa is a prospective East African highland banana farmer in Rakai district and she has approached you for guidance in various aspects of the crop agronomy. Provide the farmer with the banana agronomy guide, under the following items.

- (a) Ecological requirements (5 marks)
- (b) Clone sets of East African Highland banana (5 marks)
- (c) Types and source of planting material (5 marks)
- (d) Spacing and plant density (5 marks)
- (e) Control of banana weevil, nematodes and banana bacterial wilt (5 marks)

Question 2:

Coffee (*Coffea robusta* and *C. arabica*) is currently the highest export earner for Uganda but farmers' yields are lower (at 0.5 t/ha) compared to yield potential of about 4.5 t/ha. The current low yields of coffee are mainly due to inappropriate management practices. Suggest an agronomic package for improved coffee production, catering for both low-mid altitude and highland areas of Uganda. *Hint: Restrict yourself to field practices after planting.* [25 marks]

Section B: Attempt any TWO questions.

Question 3:

- (a) With an example of a crop grown in Africa in each case, mention the categories of perennial crops based on agricultural classification (10 marks)
- (b) State the mechanisms that explain the superiority of perennial crops over annual crops. [8 marks]
- (c) List the factors that influence the distribution of perennial crops in East Africa. [7 marks]

Question 4:

Cocoa (*Theobroma cacao*) is a potential year-round 'cash cow' if farmers in Uganda are sensitized on the uses of the crop and appropriate growing practices.

- (a) List the products that can be obtained from cocoa. [5 marks]
- (b) Briefly explain the recommended field husbandry practices for increased productivity of cocoa. [20 marks]

Question 5:

Sugarcane (*Saccharum officinarum*) is mainly cultivated for its fibrous stalks that are rich in the sucrose which accumulate in the internodes.

- (a) Using an illustration, explain how photosynthesis precedes the accumulation of sucrose in the stalk. [15 marks]
- (b) State the characteristics that make sugarcane a commercially viable crop. [10 marks]

Question 6:

There is a farmer in Wakiso district (Uganda) exploring to venture into passion fruit production as a business using the trellising system. As an intending graduate from the Faculty of Agriculture, advise the farmer on the following:

- (a) Inputs required for operationalising the trellis system of passion fruit production. [10 marks]
- (b) Using market prices, show whether the farmer would be able to make a profit. [10 marks]
- (c) Alternative systems of passion fruit growing other than the trellis system. [5 marks]

Question 7:

Write short notes on the following agronomic practices for pineapple (*Ananas comosus*):

- (a) Ecological requirements (5 marks)
- (b) Variety selection and planting material (5 marks)
- (c) Spacing (5 marks)
- (d) Control of weeds (5 marks)
- (e) Pests and disease control (5 marks)

Question 8:

For either tea, citrus or avocado, discuss 10 modern crop culture techniques for improved productivity. [25 marks]

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