



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY
SCHOOL OF AGRICULTURAL AND FOOD SCIENCES**

**THIRD YEAR SECOND SEMESTER UNIVERSITY EXAMINATION FOR THE
DEGREE OF BACHELOR OF SCIENCE IN AGRIBUSINESS MANAGEMENT**

**2017/2018 ACADEMIC YEAR
REGULAR**

COURSE CODE: APT 3321

COURSE TITLE: PERENNIAL CROPS

EXAM VENUE:

STREAM: BSc. Agribusiness Management

DATE:

EXAM SESSION:

TIME: 2 HOURS

Instructions:

- 1. Answer ALL questions in section A and ANY other 2 Questions in section B.**
- 2. Candidates are advised not to write on question paper.**
- 3. Candidates must hand in their answer booklets to the invigilator while in the examination room.**

SECTION A [30 MARKS]

Answer ALL questions from this Section

1. Define perennial-integrated agriculture and explain its ecological, socio-economic and small holder benefits. **[5 MARKS]**

2. Outline five advantages of perennial-integrated agriculture as a sustainable cropping system over the mainstream agriculture **[5 MARKS]**

3. Differentiate between Arabica coffee and Robusta coffee varieties. **[5 MARKS]**

4. Describe climate conditions favoring coffee farming in Kenya **[5 MARKS]**

5. There is an outbreak of the fungal blister and bacterial shoot blight diseases of tea. Although chemical fungicides and bactericides are recommended for controlling the two diseases, the farmers cannot afford the chemicals due to high costs. In addition, there are concerns about the effects of chemical sprays on health and environment. Highlight ten cultural practices that are recommended to the farmers for management of these fungal and bacterial diseases **[10 MARKS]**

SECTION B (40 MARKS)

Answer ANY TWO questions in this section

- 6a. Explain the contributions of perennial crops to the economic development of Kenya **[10 MARKS]**

- 6b. In spite of the overwhelming scientific evidence that introduction of perennial cereals and oil crops will reverse the current trend of environmental and ecological damages being caused by the current cropping systems, there are numerous expected barriers to the development and adoption of these new crops. Explain these barriers **[10 MARKS]**

7a. Explain how rainfall, temperature, sunlight and relative humidity affect growth, yield and quality of sugarcane. [10

MARKS]

7b. Annual cereal grains and oil crops like wheat, maize, rice, sunflower, and soybean occupy 70% of the world total crop land. Explain the **environmental** and **ecological** consequences associated with annual-based cropping systems of these cereal grains and oil crops [10 MARKS]

8a. Pyrethrum cultivation in Kenya dates back to 1928, when Captain Gilbert Walker of the Imperial Institute brought it from Kew Gardens in London.

(i) Describe a pyrethrum plant [2

MARKS]

(ii) Name and describe the symptoms of two major diseases of pyrethrum [4

MARKS]

(iii) Explain how the two diseases are managed in the field [4

MARKS]

8b. Sisal is vegetatively propagated either through suckers or bulbils.

(i) Describe each of the two approaches of vegetative propagation [2

MARKS]

(ii) Explain the advantages and disadvantages associated with each of the two approaches

[6 MARKS]

(iii) Explain why propagation through bulbils is preferred to that of suckers? [2

MARKS]