



## **UNIVERSITY OF EMBU**

**2018/2019 ACADEMIC YEAR**

**SECOND SEMESTER EXAMINATIONS**

**FIRST YEAR EXAMINATION FOR THE DEGREE OF MASTER OF SCIENCE IN PLANT  
BREEDING AND BIOTECHNOLOGY**

**ACB 605: BREEDING EAST AFRICAN CROPS**

**DATE: APRIL 9, 2019**

**TIME: 2.00 - 5.00PM**

**INSTRUCTIONS:**

**Answer any FOUR Questions**

**QUESTION ONE (25 MARKS)**

- Describe the procedure of artificial cross pollination of wheat. (5 marks)
- Discuss five components of grain yield that rice breeders can focus on to increase rice production in East Africa. (10 marks)
- Write an overview of the sorghum seed value chain in Kenya. (10 marks)

**QUESTION TWO (25 MARKS)**

- Describe the procedure of emasculation and hybridization of the female flower in common bean. (5 marks)
- Quantitative trait loci (QTL) mapping is an important tool to identify and locate QTLs along the genome. Explain the procedure to identify QTLs associated with yield in cowpea. (20 marks)



ISO 27001:2013 Certified

*Knowledge Transforms*



ISO 9001:2015 Certified

**QUESTION THREE (25 MARKS)**

- a) Explain five types of corn on the basis of endosperm and glume characteristics. (5 marks)
- b) Describe the procedure of developing hybrid tomato. (10 marks)
- c) Describe the procedure of successful artificial cross pollination of peanut (10 marks)

**QUESTION FOUR (25 MARKS)**

In relation to cotton improvement, discuss the following:

- a) Floral biology of the cotton plant. (5 marks)
- b) Breeding objectives in East Africa. (10 marks)
- c) Breeding methods applicable to cotton improvement. (10 marks)

**QUESTION FIVE (25 MARKS)**

In relation to mango improvement, discuss the following:

- a) Floral biology of the mango plant. (5 marks)
- b) Inherent constraints to mango breeding. (10 marks)
- c) Breeding methods applicable to mango improvement. (10 marks)

**-END-**

