



THE CATHOLIC UNIVERSITY OF EASTERN AFRICA

A. M. E. C. E. A

MAIN EXAMINATION

JANUARY – APRIL 2015 TRIMESTER

FACULTY OF SCIENCE

DEPARTMENT OF NATURAL SCIENCES (BIOLOGY)

REGULAR PROGRAMME

BIO 406: PLANT BIOTECHNOLOGY

P.O. Box 62157
00200 Nairobi - KENYA
Telephone: 891601-6
Fax: 254-20-891084
E-mail: academics@cuea.edu

Date: April 2015	Duration: 2 Hours
Instructions: Answer Question ONE and any other TWO Questions.	

- Q1. a) Define mutation and give different types of mutation. (10 marks)
- b) Definition, aims and practical applications of bioinformatics. (10 marks)
- c) Define transgenic plant and illustrate your answers with some examples. (10 marks)
- Q2. a) Define genetic engineering. (2 marks)
- b) Why genetically engineer plants and what are the associated challenges? (18 marks)
- Q3. Discuss the distribution, economic importance and management strategy of a fungal disease of your choice. (20 marks)
- Q4. Plant transformation with the Ti Plasmid of *Agrobacterium tumefaciens*: Describe the bacterium isolation process. Schematic drawing of a cloning process of favorite gene or the target gene in the small T-DNA plasmid in E-coli, isolate the plasmid and use it to transform the disarmed *Agrobacterium tumefaciens*. (20 marks)

END