

JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY SCHOOL OF AGRICULTURAL AND FOOD SCIENCES UNIVERSITY EXAMINATION FOR DEGREE OF BACHELOR OF SCIENCE IN HORTICULTURE

SECOND YEARSECOND SEMESTER 2013/2014 ACADEMIC YEAR

REGULAR

COURSE CODE: AAB 3226

COURSE TITLE: Cell and Tissue Culture and Transgenic Technologies

EXAM VENUE:LR 3 STREAM: BSc (Horticulture)

DATE:11/12/14 EXAM SESSION: 2.00 -4.00 PM

TIME: 2.00 HOURS

Instructions:

- 1. Answer ALL question in Section A (compulsory) and ANY TWO questions in Section B.
- 2. Candidates are advised not to write on the question paper.
- 3. Candidates must hand in their answer booklets to the invigilator while in the examination room.

SECTION A [30 MARKS]

[10 marks]

1. (a) List the four (4) types of plant tissue culture technique.	[2marks]
(b) What is totipotency? Why is it important to tissue culture?	[2marks]
(c) What is an explant?	[2marks]
(d) Define the term callus.	[2marks]
(e) List the ingredients of a tissue culture medium.	[2marks]
2. Explain in detail the four steps of micropropagation. Explain why each step is necessary.	[10 marks]
3. Any laboratory in which tissue culture techniques are performed regardless	

SECTION B [40 MARKS]

4. Discuss the role of growth regulators in various tissue culture applications. [20 marks]

of specific purpose contains a number of work areas. Discuss the work areas,

5. Explain the following molecular techniques. Give clear examples.

detailing what each area entails.

(a) Polymerase Chain Reaction. [6 marks] (b) Gel electrophoresis. [6 marks] (c) Molecular markers. [8 marks]

6. Discuss ways of minimizing contamination in a tissue culture laboratory. [20 marks]