



KENYATTA UNIVERSITY
UNIVERSITY EXAMINATIONS 2010/2011
OPEN, DISTANCE AND E-LEARNING
EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE AND
BACHELOR OF EDUCATION
SBT 425: CELL AND TISSUE CULTURE

DATE: THURSDAY, 7TH JULY 2011

TIME: 8.00 A.M. – 10.00 A.M.

INSTRUCTIONS:

Answer **ALL** questions in Section A and **ANY ONE** in Section B. Answers in Section A should be concise and should be written in the spaces provided in the question paper. Answers to Section B should be written in the booklet provided.

SECTION A: Short answer questions (5 marks each)

1. List five equipments used in tissue culture and explain their uses.

2. Describe the steps involved in the preparation of a solid culture media.

3. Explain five factors which affect the multiplication of plant cells in tissue culture.

4. Discuss kind of aseptic techniques applied during the culturing of explants in the tissue culture laboratory.
5. Explain five advantages of producing planting materials using *in vitro* culture techniques compared to macropropagation used by smallholder farmers.

6. a) Explain the meaning of the following terms:
- i. Cell suspension cultures
 - ii. Heterorkayons
 - iii. Vertical lamina hood
- b) Describe two methods of isolating plant protoplast

7. Explain the causes and ways of detecting somaclonal variations generated through tissue culture.

8. Describe the methods used to determine growth in tissue culture experiments.

SECTION B: Answer ANY ONE question (30 marks)

1. Describe the history of tissue culture and current status in Kenya.
2. Describe the steps involved in the micropropagation of plants and subsequent transfer into the greenhouse.
3. Describe the methods used in the preservation of cultures.
