



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2010/2011

INSTITUTE OF OPEN LEARNING

EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE AND

BACHELOR OF EDUCATION

SBT 420: BIOTECHNOLOGY

DATE: THURSDAY, 3RD FEBRUARY 2011

TIME: 4.30P.M. - 6.30 P.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.

SECTION: SHORT ANSWER QUESTIONS (5 MARKS EACH)

1. a) Explain what are DNA restriction enzymes? How do these enzymes participate in the recombinant DNA technology?

2. Describe the role of biosensors in waste management.

3. Describe the process of somatic hybridization.

4. Outline the distinctions between mutagenesis and genetic engineering.

5. Explain what is meant by the following terms:

a) Gene technology

b) Modern biotechnology

c) Totipotency

d) DNA libraries

e) Somatic embryogenesis

6. Discuss five methods used to assess the delivery of transgenes into the plant cells.

7. a) Explain what is meant by gene cloning?

b) Explain the importance of gene cloning.

8. Discuss how aseptic technique can be maintained when working in the laminar hood when undertaking tissue culture experiments.

SECTION B: ESSAY QUESTIONS (30 MARKS)

1. Discuss the applications of biotechnology in plant sciences.
2. Describe the methods used in the production of genetically modified crop plants.
3. Describe the process of fermentation.