UNIVERSITY EXAMINATIONS

JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

BACHELOR OF EDUCATION (SCIENCE)

THIRD YEAR FIRST SEMESTER EXAMINATIONS

SBT 301 PLANT GROWTH AND DEVELOPMENT

INSTRUCTIONS

1. Read the questions carefully before answering

2. Answer ALL questions from Section A and TWO questions from Section B

SECTION A (30 Marks)

1. Explain the differences between determinate and indeterminate meristems. (3 Marks)
2. Explain the steps in plant growth and development. (3 Marks)
3. Using, diagrams illustrate:
   a. Plant size increase versus time.
   b. Rate of growth of plants versus time (3 Marks)
4. Briefly describe lateral root formation. (3 Marks)
5. Explain why seeds are important for fruit growth and development (3 Marks)
6. List three (3) synthetic auxins and give one application for each one of them. (3 Marks)
7. Explain the applications of auxins to the agricultural Industry in Kenya. (3 Marks)
8. Briefly describe the effects of Gibberellins in
   a. Intact Plants
   b. Excised Plants (3 Marks)
9. Why are cytokinins important to:
   a. Farmers
   b. Consumers of horticultural produce? (3 Marks)
10. State why is mixing of fruits and vegetables in the same container is NOT recommended? (3 Marks)

SECTION B (40 Marks)

11. Describe Ethylene and ABA(Abscisic Acid) under the following subheadings:
    a. Synthesis (10 Marks)
    b. Effects on plant growth and development (10 Marks)
12. Describe the following with examples:

a. Photoperiodism (6 Marks)

b. Tropisms (7 Marks)

c. Senescence (7 Marks)

13. Give an account of the following micropropagation techniques and their applications

a. Protoplast Culture (6 Marks)

b. Embryo Culture (7 Marks)

c. Ovule/Ovary Culture (7 Marks)

14. Describe nastic responses with examples (20 Marks)