KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2011/2012

SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE

(MICROBIOLOGY, BIOLOGY, BIOCHEMISTRY AND BIOTECHNOLOGY)

SBT 201: PLANT FUNCTION

DATE: Thursday 29th March 2012 **TIME: 8.00a.m – 10.00a.m**

INSTRUCTIONS

Answer **ALL** questions in **Section A** and any one question in **Section B**. Answers in **Section A** should be concise and should be written in the spaces provided on the question paper.

SECTION A: SHORT ANSWER QUESTIONS (5 Marks)

1. Describe plant growth response to nutrient concentration.

2. Distinguish between:
    - Molal and molar solutions
    - Saturated and unsaturated fatty acids
    - Peptide bond and glycosidic bond
    - Plant hormone and plant growth regulators
    - Suspension and emulsion

3. Explain the term "substrate-level phosphorylation"

4. Why do living plants need a great deal of water for their activities?

5. (a) Define the term colloid.

(b) Explain what happens where a narrow beam of light is passed through a
   i. Solution

   ii. Colloid

6. What is the structural difference between α and β monosaccharides? Why is this difference important?

7. Oils are a common storage form in seeds, particularly small seeds. What advantage does this offer the seed?

8. A fresh mixture of spinach leaf pigments was put o a strip of Whatman paper inserted in 80% acetone to separate the leaf pigments. Draw a labelled diagram to show the expected results.

SECTION B: Essay Questions (30 marks)

1. Discuss the factors that affect enzyme activity.
2. The physiological effects of the major plant hormones.
3. Discuss the events of light and dark phases of photosynthesis.