



A Constituent College of Kenyatta University

**UNIVERSITY EXAMINATIONS 2010/2011 ACADEMIC YEAR**

**INSTITUTIONAL BASED PROGRAMME**

**2<sup>ND</sup> YEAR EXAMINATION FOR THE DEGREE OF BACHELOR OF EDUCATION**

**COURSE CODE/ TITLE: SBT 201: PLANT FUNCTION**

**END OF SESSION I**

**DURATION: 3 HRS**

**DAY/TIME: WEDNESDAY 7.00AM -10.00AM**

**DATE: 03.08.2011-LF1**

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**INSTRUCTIONS:**

1. Answer ALL questions in Section A and any Two questions in Section B
2. Illustrate your answers with diagrams wherever appropriate

**SECTION A**

**(40MARKS)**

**Question One**

- a) Briefly describe four (4) types of soil water that affect plant growth. **(4marks)**
- b) List six (6) processes by which materials get into and out of cell. **(6marks)**

**Question Two**

- a) Give the meaning of the following components of water potential:

i)  $\Psi_0$  **(1mark)**

ii)  $\Psi_\pi$  **(1mark)**

- iii)  $\Psi_p$  (1mark)
- iv)  $\Psi_s$  (1mark)
- v)  $\Psi_v$  (1mark)
- vi)  $\Psi_m$  (1mark)

b) State the functions of each of the following plant micronutrients.

- i) Boron (1mark)
- ii) Chlorine (1mark)
- iii) Copper (1mark)
- iv) Iron (1mark)

### Question Three

- a) State four (4) uses of energy released during the respiration process. (4marks)
- b) List four (4) factors that affect the rate of enzyme catalyzed reactions. (4marks)
- c) Differentiate between competitive and non-competitive inhibition. (2marks)

### Question Four

- a) List five (5) classes of plant hormones. (5marks)
- b) State and give colour for each of the five (5) component pigments of chlorophyll molecule. (5marks)

## SECTION B

**(30MARKS) ANSWER ANY TWO QUESTIONS**

### Question Five

Discuss the dark stage of photosynthesis is described by Melvin and Calvin. (15marks)

### Question Six

Compare and contrast, C3 and C4 pathways. (15marks)

### Question Seven

Discuss the structure, formation and functions of proteins. (15marks)