JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF BIOLOGICAL AND PHYSICAL SCIENCES

UNIVERSITY EXAMINATION FOR THEDEGREE OF BACHELOR OF EDUCATION (SCIENCE)

1ST YEAR 1ST SEMESTER 2013/2014 ACADEMIC YEAR

MAIN

COURSE CODE: SBI 3111

COURSE TITLE: PLANT STRUCTURE AND FUNCTIONS

EXAM VENUE : LAB 3 **STREAM: (Biological Sciences)**

DATE: 14/04/14 **EXAM SESSION: 2.00 –4.00 PM**

TIME: 2.00 HOURS

Instructions:

1. **Answer ALL Questions in Section A and ANY other 2 questions in Section B**
2. **Candidates are advised not to write on the question paper.**
3. **Candidates must hand in their answer booklets to the invigilator while in the examination room.**

SECTION A

1. Explain the functions of the following organelles: (3 Marks).
(a) Glyoxisomes
(b) Chloroplast
(c) Peroxisomes
2. Draw labelled diagrams of (a) Monocotyledonous stem in Cross section (b)Transverse section of a leaf. (3 Marks)
3. Describe briefly the functions of sclerenchyma and epidermal tissues. (3 marks)
4. Explain Fick's first Law of Diffusion and relate it to chemical potential. (3 Marks)
5. Explain the term water Potential. (3 Marks)
6. Explain the beneficial associations between the root and some microorganisms. . (3 Marks)
7. Describe briefly the origin of Lateral roots. (3 Marks)
8. Describe briefly the structure of a fruit. (3 Marks)
9. Explain the role of Embryo sac in fertilization. (3 Marks)
10. Explain the functions of the Intercalary meristems. (3marks)

SECTION B

11. Describe in detail the process of Photosynthesis . (20 Marks)

12. Discuss the following:
(a) The Process of Respiration. (8 Marks)
(b) Seed Germination Process. (6 Marks)
(c) Mineral Uptake by Plants . (7 Marks)

13. Describe the structural adaptations of the leaf growing in dry and wet habitats. . (20 Marks).

14. Give an account of the relationship between structure and function of the leaf . . (20 Marks).