



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY
SCHOOL OF BIOLOGICAL AND PHYSICAL SCIENCES
UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF EDUCATION
(SCIENCE)
2ND YEAR 1ST SEMESTER 2013/2014 ACADEMIC YEAR
MAIN

COURSE CODE: SBI 3214

COURSE TITLE: PLANT GROWTH AND DEVELOPMENT

EXAM VENUE: CR

STREAM: (Biological Sciences)

DATE: 15/04/14

EXAM SESSION: 9.00 – 11.00 AM

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 (30 MARKS)

Answer ALL questions from this section

1. Explain seed polymorphism. (2 marks)
2. Differentiate epigeal from hypogeal seed germination. (4 marks)
3. Distinguish seed dormancy from quiescence. (2 marks)
4. Explain morphological dormancy in seeds. (4 marks)
5. Explain:
 - a) Phytochrome (2 marks)
 - b) Morphogenesis (2 marks)
 - c) Parthenocarpy (2 marks)
6. Present well labeled diagrams of meristem shoot apex and root tip showing aspects of cellular differentiation. (5 marks).
7. Explain the role of apical dominance in correlative growth in plants. (4 marks)
8. Explain mechanisms of root initiation . (3 marks)

SECTION B (40 MARKS)

- 9 a) Schematically, describe the stages in seed germination process. (11 marks)
 - b) Using illustrations, explain how temperature, light and moisture impact on seed germination . (9 marks).
10. To a greater extent, various plant hormones exert influence on growth and . developmental processes. Discuss (20 marks)
11. The pattern of growth in plants takes the form of a sigmoid or S – shaped curve. Graphically illustrate the stages. Discuss how the stages differ with each crop species . and/ or cultivars. (20 marks)
12. Discuss ecological factors influencing plant growth and development. (20 marks)