JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF AGRICULTURAL AND FOOD SCIENCES

UNIVERSITY EXAMINATION FOR DEGREE OF BACHELOR OF SCIENCE IN HORTICULTURE.

4th YEAR 1ST SEMESTER 2016/2017 ACADEMIC YEAR

REGULAR

COURSE CODE: AAB 3412:

COURSE TITLE: BIOTECHNOLOGY IN HORTICULTURE.

EXAM VENUE: **STREAM: (BSc. Horticulture.)**

DATE: **EXAM SESSION:**

TIME: 2 HOURS

Instructions

1. **Answer ALL questions in Section A (compulsory) and ANY TWO 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 in this section

1. Outline the basic features of vectors for plant transformation. (4 Marks)
2. What is a protoplast and how is it obtained. (4 Marks)
3. Distinguish between the following terms: cis genesis, trans-genesis and genetically modified organism. (3 Marks)
4. Distinguish between a promoter and a terminator. (4 Marks)
5. What are the factors that characterize ripening in climacteric fruits? (4Marks)
6. What are bt toxins and how do they act in pest control. (3 Marks)
7. What are the strategies used in the development of herbicide tolerance horticultural crops. (3 Marks).
8. How is cross protection work in the control of virus? (3 Marks)
9. What are the modifications done on the pre-mRNA to obtain mature RNA (2 Marks)

SECTION B [40 MARKS]

Answer ANY TWO questions from this section

10. Explain the polymerase chain reaction method for amplifying a given stretch of DNA (20 Marks)
11. Discuss the process of transcription and translation during gene expression. (20 Marks)
12. Discuss with relevant examples, the biotechnological applications in post-harvest of Horticultural crops (20 Marks).