



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY
SCHOOL OF AGRICULTURAL AND FOOD SCIENCES**

**FIRST SEMESTER FIRST YEAR EXAMINATION FOR THE DEGREE OF
BACHELOR OF SCIENCE IN AGRICULTURAL EDUCATION EXTENSION,
BACHELOR OF SCIENCE IN HORTICULTURE, BACHELOR OF SCIENCE IN
SOIL SCIENCE, BACHELOR OF SCIENCE IN ANIMAL SCIENCE 2020/2021
ACADEMIC YEAR**

COURSE CODE: APB 9103

COURSE TITLE: Agricultural Botany

EXAM VENUE: **STREAM: (BSc. Agric. Edu. Ext., BSc. Hort.,
BSc. Soil Science, BSc. Animal Science)**

DATE: **EXAM SESSION:**

TIME: 2HOURS

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 from this Section.

1. Define the following terms as used in cell biology. **[5 Marks]**
 - a) Ploidy
 - b) Chiasma
 - c) Hyperplasia
 - d) Karyokinesis
 - e) Biparental inheritance

2. State the role played by each of the following cells. **[3 Marks]**
 - a) Sieve plates
 - b) Companion cells
 - c) Tracheids

3. Define the following terms as used in developmental biology. **[3 Marks]**
 - a) Cell differentiation
 - b) Cell dedifferentiation
 - c) Pattern formation

4. Explain the FOUR major areas of investigation in plant morphology. **[4 Marks]**

5. Give functions of the following primary meristems. **[3 Marks]**
 - a) Protoderm
 - b) Ground meristem
 - c) Procambium

6. State the main differences between Mitosis and Meiosis. **[4 Marks]**

7. Differentiate between the following terms as used in plant botany. **[2 Marks]**
 - a) Aggregate and Multiple fruits
 - b) Perfect and Imperfect flowers

8. Using well-labeled diagrams differentiate between the cross section of a monocot and dicot root. **[6 Marks]**

SECTION B [40 MARKS]

Answer ANY TWO questions from this Section.

9. Using appropriate diagrams outline the following processes.
 - a) Primary growth of the root **[8 Marks]**
 - b) Secondary growth of the stem **[12 Marks]**

- 10.
- a) Outline the changes that take place during Cell Morphogenesis. **[5 marks]**
 - b) Using well-labeled diagrams outline the process of Mitosis in cell division. **[15 Marks]**
11. Discuss the successive morphogenic processes leading to fully developed cell types from their initial point of derivation. **[20 Marks]**