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CAG 002



*University of choice*

**MASINDE MULIRO UNIVERSITY OF SCIENCE AND  
TECHNOLOGY (MMUST)  
SCHOOL OF AGRICULTURE, VETERINARY SCIENCES AND  
TECHNOLOGY (SAVET)**

**MAIN CAMPUS  
UNIVERSITY EXAMINATIONS  
2023/2024 ACADEMIC YEAR  
MAIN EXAMS FOR  
CERTIFICATE IN GENERAL AGRICULTURE**

**COURSE CODE: CAG 002**

**COURSE TITLE: BOTANY**

**DATE: 13.12.23**

**TIME: 8-10AM**

**INSTRUCTIONS TO CANDIDATES**

This paper is divided into two sections, A and B. Answer ALL Questions in SECTION A and any Two in SECTION B

*MMUST OBSERVES ZERO TOLERANCE TO EXAMINATION CHEATING*

**SECTION A (ANSWER ALL QUESTIONS) 40 MARKS**

1. a) What is the primary purpose of microscopes in scientific research? [2 marks]  
b) State the resultant total magnification of an object as seen through a microscope with each of the following objectives? [3 marks]  
4 × = -----  
10 × = -----  
43 = -----
2. In some restaurants, sliced potatoes are soaked in water before they are fried. What could be the possible explanation for this practice? [5 marks]
3. In order for photosynthesis to occur in green plants, the following must be present: [4 marks]
  - a. \_\_\_\_\_ as the energy source.
  - b. \_\_\_\_\_ as the carbon source.
  - c. \_\_\_\_\_ for the absorption of light energy.
  - d. \_\_\_\_\_ as the electron donor
4. Certain fruits such as apples are frequently stored under refrigeration in a carbondioxide-rich atmosphere. Explain the reason for this. [5 marks]
5. Name the organism found in nodules and its role in plant development? [3 marks]
6. Briefly explain why taxonomy is important [5 marks]
7. Classify the leaves of the following using dichotomous keys: [7 marks]  
Sorghum, Common bean, Hibiscus, Cassava
8. A whole leaf, part of a leaf, or a leaflet of a compound leaf may be modified to form a tendril. Give an example of a plant whose whole leaf has been modified into tendrils. [2 marks]
9. Differentiate herbs from shrubs [4 marks]

**SECTION B (ANSWER 2 QUESTIONS ONLY) 30 MARKS**

10. a. Tabulate the differences between the root and shoot external structure. [8 marks]
- b. With examples, describe the following plant modifications; [7 marks]
- i. Tubers
  - ii. Corms
  - iii. Rhizomes
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- 11 a. Describe the process of transpiration in plants. [8 marks]
- b. What is the significance of the above process [4 marks]
12. Discuss the plant tissue systems and explain how these tissues contribute to the plant's ability to thrive in various environmental conditions? [15 marks]
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