



MACHAKOS UNIVERSITY

University Examinations for 2021/2022 Academic Year

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

SECOND YEAR FIRST SEMESTER EXAMINATION FOR
BACHELOR OF SCIENCE (AGRICULTURAL EDUCATION AND EXTENSION)
BACHELOR OF SCIENCE IN (BIOLOGY)
BACHELOR OF EDUCATION
SBT 201: PLANT FUNCTION

DATE: 9/12/2021

TIME : 2.00-4.00 PM

INSTRUCTIONS

- 1 Answer Question 1 (compulsory) and **any two** questions in Section B
- 2 Use clean well labeled diagrams wherever appropriate

SECTION A (COMPULSORY)

QUESTION ONE (COMPULSORY)

- | | | |
|----|--|-----------|
| a) | Distinguish between Molal and Molar solutions | (3 marks) |
| b) | Explain the composition of colloidal systems | (3 marks) |
| c) | Design an experiment to illustrate brownian movement | (3 marks) |
| d) | Describe the role of hydrophilic particles in the hydration of plant cells | (3 marks) |
| e) | Outline the components of water potential | (3 marks) |
| f) | Describe the effect of element concentration on growth rate in plants | (3 marks) |
| g) | Explain the basis of classifying nutrients into micro and macro –nutrients | (3 marks) |
| h) | Describe three factors affecting respiration | (3 marks) |
| i) | Outline the significance of carbohydrates to plants | (3 marks) |
| j) | Describe the distribution of enzymes in relation to their roles | (3 marks) |

SECTION B

QUESTION TWO (20 MARKS)

Discuss significance of endogenous plant hormones

QUESTION THREE (20 MARKS)

Discuss photosynthesis

QUESTION FOUR (20 MARKS)

- a) Describe the reaction sequences of glycolysis (10 marks)
- b) Explain the process of aerobic respiration (10 marks)

QUESTION FIVE (20 MARKS)

Discuss the classification of proteins