



MACHAKOS UNIVERSITY
University Examinations for 2020/2021
SCHOOL OF PURE AND APPLIED SCIENCES
DEPARTMENT OF BIOLOGICAL SCIENCES
SECOND YEAR SECOND SEMESTER EXAMINATION FOR
BACHELOR OF EDUCATION (SCIENCE)
SBT 201 PLANT FUNCTIONS

DATE: 9/8/2021

TIME: 2:00 – 4:00 PM

INSTRUCTIONS

Answer (1) Compulsory and and **any TWO** Questions in Section B

SECTION A (COMPULSORY)

QUESTION ONE (30 MARKS)

- a) Describe the following terms
 - i) Osmotic potential (2 marks)
 - ii) Molar solution (2 marks)
- b) Explain how flocculation in a colloid can be prevented (2 marks)
- c) Outline the components of water potential (3 marks)
- d) Describe ion uptake in the plant cell (2 marks)
- e) Describe the distinguishing features of respiration and photosynthesis (4 marks)
- f)
 - (i) Describe the effect of pH on enzyme activity (2 marks)
 - (ii) Describe the prosthetic group of an enzyme (2 marks)
- g) Explain the fate of pyruvic acid in aerobic respiration (2 marks)
- h) Describe the term “Activation Energy” (2 marks)
- i) Describe the rate limiting steps in glycolysis (4 marks)
- j) Explain the methods used to detect and study mineral elements (3 marks)

SECTION B – WRITE AN ESSAY ON ANY TWO QUESTIONS (40 MARKS)

QUESTION TWO (20 MARKS)

Discuss the classification of carbohydrates.

QUESTION THREE (20 MARKS)

Discuss Physiological effects of major plant hormones.

QUESTION FOUR (20 MARKS)

Discuss the properties of colloids.

QUESTION FIVE (20 MARKS)

Discuss the role of Water, Carbon dioxide and Chlorophyll in the process of photosynthesis.