MURANG'A UNIVERSITY OF TECHNOLOGY

SCHOOL OF PURE & APPLIED SCIENCES

DEPARTMENT OF PHYSICAL & BIOLOGICAL SCIENCES

UNIVERSITY ORDINARY EXAMINATION

2018/2019 ACADEMIC YEAR

SECOND YEAR **FIRST** SEMESTER EXAMINATION FOR BACHELOR OF EDUCATION SCIENCE

ABT 203 – PLANT STRUCTURE AND FUNCTIONS

DURATION: 2 HOURS

DATE: 15/4/2019

TIME: 9-11 A.M.

Instructions to candidates:

1. Answer question One and Any Other Two questions.
2. Mobile phones are not allowed in the examination room.
3. You are not allowed to write on this examination question paper.

SECTION A: ANSWER ALL QUESTIONS IN THIS SECTION

QUESTION ONE (30 MARKS)

(a) Explain the functions of the following (8 marks)
   i. Xylem vessels
   ii. Phloem
   iii. Root system
   iv. Ground tissue

(b) Explain the specialization of palisade cells (2 marks)

(c) Draw a well labelled diagram to illustrate the structure of a plant cell under light microscope (5 marks)

(d) Explain the phases of photosynthesis (4 marks)

(e) Distinguish indeterminate growth from determinate growth in plants (2 marks)

(f) Explain the location and functions of apical meristems (4 marks)

(g) Distinguish an achene from a drupe (2 marks)

(h) Explain three minerals and water uptake pathways in plants. (3 marks)

SECTION B – ANSWER ANY TWO QUESTIONS IN THIS SECTION

QUESTION TWO (20 MARKS)

a) Using a well labelled diagram, illustrate the structure of a dicot root (12 marks)

b) Compare and contrast dicot and monocot stems (8 marks)

QUESTION THREE (20 MARKS)

Describe the process of secondary growth in eudicots (20 marks)

QUESTION FOUR (20 MARKS)

a) Describe various types of dormancy in seeds (10 marks)

b) Discuss five methods of breaking seed dormancy (10 marks)