



MACHAKOS UNIVERSITY

University Examinations 2016/2017

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

FIRST YEAR SECOND SEMESTER EXAMINATION FOR

BACHELOR OF SCIENCE (BIOLOGY)

BACHELOR OF EDUCATION

SBT 102: PLANT MORPHOLOGY AND ANATOMY

DATE: 7/6/2017

TIME: 2:00 – 4:00 PM

INSTRUCTIONS

Answer Question **ONE** in Section A and **ANY TWO** questions in Section B

SECTION A

1. a) Explain the structural and functional differences between primary cell wall and secondary cell wall (3 marks)
- b) Explain and illustrate how microtubules develop in a plant cell. (3 marks)
- c) Describe briefly the different types of sclerenchyma cells found in higher plants (3 marks)
- d) Explain why the cells of Hypodermis are compactly arranged without any intercellular spaces compared to cortex whose intercellular spaces are prominent (3 marks)
- e) Explain why *Desmondium rotundifolium* be categorized under descriptive epithet while *Garcinia livingstone* is categorized as Commemorative epithet (3 marks)
- f) Giving examples in each case, describe the different types of ovaries found in higher plants (3 marks)
- g) Distinguish between any three (3) types of placentation in plants. (3 marks)

- h) Briefly describe the role of diagnostic features in plant identification and classification. (3 marks)
- i) a) Define the word double fertilization? (1 mark)
b) Describe the role of double fertilization in seed growth and development (2 marks)
- j) Briefly, describe the concept of “Heterogony” in plant morphogenesis (3 marks)

SECTION B: ANSWER ANY OTHER TWO QUESTIONS

- 2. Discuss the different types of approaches to Plant morphology (20 marks)
- 3. Discuss the development of a fertilized ovule into a mature seed. (20 marks)
- 4. Discuss the different types of inflorescences known in higher plants. (20 marks)
- 5. Discuss the development of successive cambia in vascular plants (20 marks)