



KISII UNIVERSITY

UNIVERSITY EXAMINATIONS

FIRST YEAR EXAMINATION FOR THE AWARD OF THE DEGREE OF BACHELOR OF SCIENCE IN BOTANY

SECOND SEMESTER 2022/2023

[JANUARY-APRIL, 2023]

BOTA 121: PLANT ANATOMY AND MORPHOLOGY

STREAM: Y1S2

TIME: 2 HOURS

DAY: THURSDAY, 3:00 – 5:00 PM

DATE: 30/03/2023

INSTRUCTIONS

- 1. Do not write anything on this question paper.**
- 2. Answer question ONE and any other TWO questions in Section B.**

1. Explain the importance of the study of Anatomy to a Botanist. (5marks)
2. Structurally, distinguish the following terms:
 - i) Petiole and pedicel (2marks)
 - ii) Primary cellwall and middle lamellae (2marks)
 - iii) Epicarp and pericarp (2marks)
 - iv) Trichome and prickle (2marks)
 - v) Pedicel and peduncle (2marks)
2. Identify plant cell organelles containing DNA and state the function of the DNA in the identified organelles. (4marks)
3. Elucidate the structure of a collenchyma cell. (4marks)
4. Structurally, differentiate mitochondrion from the chloroplast. (4marks)
5. Highlight the physiological significance of parenchyma in plant's life. (4marks)
6. Outline the evolutionary modifications of plant roots. (4marks)
7. Explain the adaptations of the xylem to its functions. (5marks)

SECTION B

11. Describe cell vacuolation process and its relationship to cell growth. (15marks)
12. With an example of a sorghum plant, explain the types of meristem. (15marks)
10. Describe secretory glands in vascular plants. (15marks)