

**CHUKA**



**UNIVERSITY**

**UNIVERSITY EXAMINATIONS**

**EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE**

**BOTA 121: PLANT ANATOMY AND MORPHOLOGY**

**STREAMS: B.SC (BOTA)**

**TIME: 2 HOURS**

**DAY/DATE: MONDAY 11/07/2016**

**8.30 A.M. – 11.30 A.M.**

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**INSTRUCTIONS:**

- **Answer all questions in Section A and any other two in Section B.**

**SECTION A (30 MARKS)**

- (a) Name major zones of a root. (2 marks)
  - (b) List the modifications of a tap root for storage. (2 marks)
  - (c) Explain the internal structure of a root endodermis. (2 marks)
- (a) List the anatomical features that differentiate hornworts from other bryophytes. (2 marks)
  - (b) Explain the structure of a hyphae. (2 marks)
- (a) Classify leaves in terms of duration (1 mark)
  - (b) State the types of insertion of floral leaves. ( $1\frac{1}{2}$  marks)
  - (c) Name the inflorescence that mature from the base. ( $1\frac{1}{2}$  marks)

4. Differentiate between:
- (i) Caudex and culm stem. (2 marks)
  - (ii) Rhizome and tuber. (2 marks)
5. Illustrate the following with diagrams.
- (i) Three forms of aestivation. ( $1\frac{1}{2}$  marks)
  - (ii) Cell wall thickening of tracheids. ( $2\frac{1}{2}$  marks)
6. (a) Outline the attachment of filament to anther lobe. (2 marks)
- (b) Classify the following:
- (i) Dry fruits. ( $1\frac{1}{2}$  marks)
  - (ii) Meristems based on the position in plant body. ( $1\frac{1}{2}$  marks)
  - (c) Explain the conjoint vascular bundle. (3 marks)

**SECTION B (40 MARKS)**

**Answer any TWO questions.**

7. Discuss anatomical differences between a dicot stem and a monocot stem. (20 marks)
8. Elaborate with a diagram the internal structure of a leaf and the functions of the tissues. (20 marks)
9. Discuss the internal adaptations of plants in response to their environment. (20 marks)
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