



THE CATHOLIC UNIVERSITY OF EASTERN AFRICA

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MAIN EXAMINATION

JANUARY – APRIL 2019 TRIMESTER

FACULTY OF SCIENCE

DEPARTMENT OF BIOLOGY

REGULAR PROGRAMME

BIO 202: PLANT STRUCTURES AND FUNCTIONS

Date: April 2019

Duration: 2 Hours

INSTRUCTIONS: Answer Question ONE and any other TWO Questions

- Q1. a) Describe how venation patterns are used to differentiate dicots and monocots **(2 marks)**
- b) Name the three major internal parts of the stem and identify their functions **(9 marks)**
- c) Explain mechanism of preventing self-fertilization in flowers **(3 marks)**
- d) i) Describe using diagram zones of the plant root hair and their functions **(6 marks)**
- ii) Discuss similarities and differences between angiosperms and gymnosperms **(10 marks)**
- Q2. a) Describe morphogenesis and levels of cellular competence **(11 marks)**
- b) Define the following terms **(9marks)**
- i) Cellular determination
- ii) Cellular positioning
- iii) Cellular habituation
- Q3. a) Define the following terms **(6marks)**
- i) Cellular multipotency
- ii) Centromere

iii) Cytokinesis

- b) i) Explain the differences between interphase and mitotic phase of the plant cell division **(2 marks)**
- ii) Describe the events taking place during interphase **(9 marks)**
- c) Describe the differences between tracheids and vessel elements in plant tissues **(3 marks)**
- Q4. Describe the various modifications of leaf and root to their functions **(20 marks)**
- Q5. Discuss the internal adaptations of plants in response to their environment **(20 marks)**

END