



OFFICE OF THE DEPUTY PRINCIPAL
ACADEMICS, STUDENT AFFAIRS AND RESEARCH

UNIVERSITY EXAMINATIONS

2020 /2021 ACADEMIC YEAR

SECOND YEAR SECOND SEMESTER MAIN EXAMINATION

**FOR THE DEGREE OF BACHELOR OF
EDUCATION SCIENCE**

COURSE CODE: BOT 202E

**COURSE TITLE: DEVELOPMENTAL BIOLOGY AND
PHYSIOLOGY (PLANTS)**

DATE: 21ST JULY, 2021

TIME: 08.00 AM – 11.00 AM

INSTRUCTIONS TO CANDIDATES

- SEE INSIDE

THIS PAPER CONSISTS OF 3 PRINTED PAGES

PLEASE TURN OVER

REGULAR – MAIN EXAM

BOT 202E: DEVELOPMENTAL BIOLOGY AND PHYSIOLOGY (PLANTS)

STREAM: BED (SCIENCE)

DURATION: 3 Hours

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INSTRUCTIONS TO CANDIDATES

- i. Answer ALL questions from section A and any THREE from section B.*
 - ii. Diagrams should be used whenever they serve to illustrate the answer.*
 - iii. Do not write on the question paper.*
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SECTION A (24 MARKS)

Question One

- a) Highlight two importance of diffusion in plants. (2 Marks)
- b) Outline any three differences between an animal and a plant cell. (3 Marks)
- c) Explain two changes that occur in a plant cell due to endosmosis. (2 Marks)
- d) Distinguish between the following terms
 - i. Epinasty and Nictinasty (2 Marks)
 - ii. Protandry and protogyny (2 Marks)
- e) Explain isometric growth. (1 Mark)

Question Two

- a) With the aid of sketches, describe the following:
 - (i) Raceme inflorescence (3 Marks)
 - (ii) Fibrous roots (3 Marks)
- b) Describe the components of vascular system in plants (3 Marks)
- c) Giving an example of each, distinguish between vital and mechanical functions of plant organs. (3 Marks)

SECTION B (36 MARKS)

Question Three

- a) Describe briefly the role played by the seed coat. (4 Marks)
- b) Describe the zonation of the root tip. (4 Marks)
- c) Discuss the alternation of generation in the life cycle of flowering plants (4 Marks)

Question Four

- a) Explain three different pathways through which water flow from epidermis to endodermis in a plant root. (3 Marks)
- b) Give an account factors which affect seed germination. (4 Marks)
- c) Explain the causes of seed dormancy (5 marks)

Question Five

- a) With help of a well labelled diagram, discuss the phases of plant growth curve. (4 Marks)
- b) Give an account of the physiological effects of auxin as a plant growth regulator. (8 Marks)

Question Six

- a) What is Embryogenesis with regard to plants (2 Marks)
- b) Describe embryogenesis in Angiosperms (10 Marks)

Question Seven

- a) Distinguish between apical and lateral meristems (2 Marks)
- a) Describe how the meristems cause secondary growth in flowering plants (10 Marks)
