

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

**THIRD YEAR EXAMINATION FOR THE AWARD OF BACHELOR OF
DEGREE OF BACHELOR OF EDUCATION (SCIENCE) AND BACHELOR OF
SCIENCE (BIOLOGY)**

BOTA 322: PLANT FROWTH AND DEVELOPMENT

STREAMS: B.Ed (SCI), BSC (BIO)

TIME: 2 HOURS

DAY/DATE: THURSDAY 25/03/2021

11.30 A.M. – 1.30 P.M.

INSTRUCTIONS:

1. Answer *ALL* questions in Section A and any other *TWO* in section B
2. Do not write anything on the question paper.

SECTION A:

1. List four factors that influence plant growth and development (4 marks)
2. a) After regeneration of cassava plants in a tissue culture experiment, the formed shoots were found to have small leaves and short internodes. Explain how this problem can be solved before taking the plants to the rooting media (2 marks)
b) State three factors that bring about development in plants (3 marks)
3. a) State the characteristics of juvenility in plants (4 marks)
b) A variety of kale has been found to drop every fifth leaf from the top. This reduces the amount that can be harvested at a particular time. Explain how this problem can be solved. (2 marks)
4. a) Describe the alternation of generation in plants (3 marks)
b) After cutting the bark of a tree the leaves of the surrounding plants started yellowing. Explain what caused this effect. (2 marks)

5. Describe the formation of the male gametophyte/pollen in plants (5 marks)
6. Using a well labeled drawing. Illustrate the structure of a mature female gametophyte (5 marks)

SECTION B

7. a) Describe double fertilization in plants (10 marks)
b) Describe the stages of embryo development in plants (10 marks)
8. a) Describe five practical applications of auxins (10 marks)
b) Discuss the factors that influence flowering in plants (10 marks)
9. a) Discuss growth movements in plants (10 marks)
b) Describe the methods of sexual reproduction in plants (10 marks)