

UNIVERSITY EXAMINATIONS

1ST SEMESTER 2022/2023 ACADEMIC YEAR

THIRD YEAR EXAMINATION FOR THE DEGREES OF
BACHELOR OF SCIENCE (GEN), BACHELOR OF
EDUCATION (SCIENCE)

BOTA 312: PLANT GROWTH AND DEVELOPMENT

STREAM: R

TIME: 2 HRS

DAY: MONDAY [2.30PM – 4.30PM]

DATE: 19/12/2022

THIS QUESTION PAPER CONSISTS OF TWO (2) PAGES

PLEASE DO NOT OPEN UNTIL THE INVIGILATOR SAYS SO.

Instructions: - Answer **ALL** questions in section **A** and any **TWO** questions in section **B**

SECTION A (40 MARKS)

QUESTION ONE

Describe the process of formation of angiosperm pollen grain. (5 marks)

QUESTION TWO

Outline the differences between radial and axial patterning. (5 marks)

QUESTION THREE

Outline five common hormone bioassays. (5 marks)

QUESTION FOUR

Describe gene expression during the last stage of embryogenesis. (5 marks)

QUESTION FIVE

Outline the features of the shoot apical meristem. (5 marks)

QUESTION SIX

State the types of phyllotaxy in plants. (5 marks)

QUESTION SEVEN

Describe zonation during root morphogenesis. (5 marks)

QUESTION EIGHT

List the photo-reversible phytochrome-induced responses in plants. (5 marks)

SECTION B (30 MARKS)

QUESTION NINE

Describe the development of the embryo sac in angiosperms. (15 marks)

QUESTION TEN

Discuss the development of the angiosperm leaf. (15 marks)

QUESTION ELEVEN

Describe the cytological and biochemical events during senescence. (15 marks)