



MACHAKOS UNIVERSITY

University Examinations for 2022 Academic Year

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

**FOURTH YEAR SUPPLEMENTARY/SPECIAL EXAMINATION EXAMINATION FOR
BSC. EDUCATION**

SBT 405: MORPHOGENESIS & DEVELOPMENTAL ANATOMY

DATE: 8/3/2023

TIME : 8.30 – 10.30 AM

INSTRUCTIONS

1. Answer Question 1 (compulsory) and **any two** questions
2. Use clean well labelled diagrams wherever appropriate.

QUESTION ONE (30 MARKS)

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|----|---|-----------|
| a) | Explain double fertilization in plants | (3 Marks) |
| b) | What is a pollen tube? | (3 Marks) |
| c) | Outline the functions of suspensor | (3 Marks) |
| d) | Explain the major functions of cotyledon | (3 Marks) |
| e) | Briefly explain the properties of meristems | (3 Marks) |
| f) | Outline the functions of the endosperm | (3 Marks) |

- g) What is cork cambium and its function (3 Marks)
- h) Briefly explain morphogenetic phases of leaf development. (3 Marks)
- i) Differentiate perfect flowers and imperfect flowers (3 Marks)
- j) Briefly describe polyembryony in plant development. (3 Marks)

QUESTIONS TWO (20 MARKS)

Discuss at least five discernable periods or phases of fruit growth after pollination and fertilization processes
(20 Marks)

QUESTIONS THREE(20 MARKS)

- i). Briefly discuss gametogenesis in general female development in plants. (10 Marks)
- ii). Discuss seed development in higher plants (10 Marks)

QUESTIONS FOUR (20 MARKS)

Discuss the secondary growth of shoots (20 Marks)

QUESTIONS FIVE (20 MARKS)

Describe in detail the endosperm formation in angiosperms. (20 Marks)