



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE & TECHNOLOGY

SCHOOL OF BIOLOGICAL AND PHYSICAL SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

**UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF EDUCATION
(SCIENCE) WITH IT**

4th YEAR FIRST SEMESTER 2016/2017 ACADEMIC YEAR

MAIN CAMPUS - REGULAR

COURSE CODE: SBT 402
COURSE TITLE: MORPHOGENESIS & ANATOMY
EXAM VENUE: **STREAM: (BED SC)**
DATE: **EXAM SESSION:**
TIME: 2 HOURS

Instructions:

- 1. Answer ALL questions in Section A and Any two questions in Section B**
 - 2. Candidates are advised not to write on question paper**
 - 3. Candidates must hand in their answer booklets to the invigilator while in the examination room**
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SECTION A: SHORT ANSWER QUESTIONS (30 MARKS)

1. Outline the pathways that can be followed by Callus during development of organized structures within a shoot apical meristem (3 marks)
2. Describe the dermal tissue system of plants (3 marks)
3. Describe the intercalary meristem (3 marks)
4. Outline the functions of the transmitting tissue during pollen tube germination (3 marks)
5. Differentiate endospermic from Non- endospermic seeds giving an example in each case (3 marks)
6. Briefly describe double fertilization in flowering plants (3 marks)
7. (i) Define totipotency (1 mark)
(ii) Name the stages involved during organogenesis in plants (2 marks)
8. Explain the effect of Auxin to Cytokinin ratio on differentiation in tobacco stem pith (3 marks)
9. Draw a well labeled structure of a male gametophyte (3 marks)
10. Briefly describe microsporogenesis in plants (3 marks)

SECTION B: ESSAY QUESTIONS (40 MARKS)

11. Describe embryo development in plants (20 marks)
12. Discuss the variation reproductive organs of a flower (20 marks)
13. Discuss plant tissue culture (20 marks)
14. Describe the development of a female gametophyte in plants (20 marks)