

CHUKA



UNIVERSITY

**UNIVERSITY EXAMINATIONS**

**EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF  
SCIENCE IN AGRICULTURE**

**AGRI 441: SEED SCIENCE AND TECHNOLOGY**

**STREAMS: BSC. AGRI (Y4S1)**

**TIME: 2 HOURS**

**DAY/DATE: FRIDAY 13/12/2024**

**2.30 P.M. – 4.30 P.M.**

**INSTRUCTIONS**

- Answer All Questions in Section A (30 marks) and any Two in Section B (40 marks)
1.
    - a) Explain any three appropriate situations when a seed scientist may use the tetrazolium (TZ) deterioration test. (3 marks)
    - b) Describe how seed labeling and sealing should be done. (3 marks)
    - c) Explain any three advantages of the informal seed system. (3 marks)
  2. Describe the physical aspects of seed quality. (4 marks)
  3.
    - a) Draw, label and explain the formation of a monosporic 4-nucleate embryo sac. (5 marks)
    - b) Explain the importance of Harrington's thumb rules and their prescribed conditions for effective seed storage. (5 marks)
  4. Explain any seven factors that may affect seed vigour. (7 marks)

**Section B (40 marks) – Answer any two questions**

5.

- a) Describe the three types of water found in seeds. (6 marks)
- b) Describe the seed germination phases from the time a seed is put in the soil to a seedling stage. (14 marks)

6.

- a) Describe the use of moisture content as a measure of seed maturity. (4 marks)
- b) Explain how moisture content can expose seeds to deterioration. (6 mark)
- c) Describe a seed coat, major parts and its functions. (10 marks)

7.

- a) Describe seed certification and explain its main objectives. (5 marks)
  - b) Describe the five major steps of a seed certification process. (15 marks)
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