



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY**

**SCHOOL OF AGRICULTURAL AND FOOD SCIENCES**

**FOURTH YEAR SECOND SEMESTER UNIVERSITY EXAMINATION FOR THE  
DEGREE OF BACHELOR OF SCIENCE IN HORTICULTURE AND  
BACHELOR OF SCIENCE IN ANIMAL SCIENCE**

**2019/2020 ACADEMIC YEAR**

**SPECIAL/RESIT EXAM**

---

**COURSE CODE: AHT 3422**

**COURSE TITLE: SEED SCIENCE AND TECHNOLOGY**

**EXAM VENUE: STREAM:**

**DATE: EXAM SESSION:**

**TIME: 2 HOURS**

---

**Instructions:**

- 1. Answer ALL questions in section A and ANY other 2 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.**

**SECTION A [30 MARKS]**

**Answer ALL questions from this Section**

1. Explain the following terms as used in seed science and technology.[10 MARKS]
  - (a) Phytosanitary certificate
  - (b) Pericarp
  - (c) Seed increase
  - (d) Microsporogenesis
  - (e) Ovule
  - (f) Pistil
  - (g) Microgametophyte
  - (h) Micropyle
  - (i) Phytase
  - (j) Pelleted seeds
  
2. Describe FIVE causes of endogenous dormancy [5 MARKS]
  
3. Deterioration of seeds is observable in their lowered performance during germination. Describe FIVE performance symptoms[5 MARKS]
  
4. There are FIVE factors responsible for the development and evolution of the seed industry. EXPLAIN [5 MARKS]
  
5. Describe FIVE objectives of seed conditioner when cleaning seeds[5 MARKS]

**SECTION B (40 MARKS)**

Answer any two questions for 20 marks each.

6. Describe the following tests for predicting seedling emergence under a wide range of field conditions[20 MARKS]
  - (a) Cold test:
  - (b) Accelerated Aging Test:
  - (c) Conductivity Test:
  - (d) Cool Germination Test:
  - (e) Seedling Growth Rate Test:
  - (f) Seedling Vigor Classification Test:
  - (g) Tetrazolium (TZ) Test:
  - (h) Speed of Germination:
  - (i) Osmotic Stress:

(j) Respiration:

7. Describe the following factors influencing life span of seeds

[20

**MARKS]**

- (a) Internal Factors:
- (b) Relative Humidity and Temperature:
- (c) Seed Moisture:
- (d) Moisture Equilibrium:
- (e) Genetic Factors:
- (f) Storage fungi:
- (g) Mechanical Damage:
- (h) Seed Maturity:

8a. Describe TEN information required on labels of seeds[10 MARKS]

8b. Seed enhancement technology has a central objective to further improve seed performance under very specific regimes and with certain planting equipment. Describe FOUR techniques for ensuring superior performance of seeds include[10 MARKS]