CHUKA  **UNIVERSITY**

UNIVERSITY EXAMINATIONS

FOURTH YEAR EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN HORTICULTURE

AGRI 441: SEED SCIENCE AND TECHNOLOGY

STREAMS: B.Sc (AGRIC) Y4S1 **TIME: 2 HOURS**

DAY/DATE: FRIDAY 8/12/2017 **8.30 A.M - 10.30 A.M.**

INSTRUCTIONS:

- **Answer ALL Questions in Section A and any TWO in Section B**

SECTION A: ANSWER ALL QUESTIONS.

QUESTION ONE

(a) Describe the formation process of a monosporic 4- nucleate embryo sac. [4 Marks]
(b) Explain the seed testing process during a seed certification scheme. [4 Marks]
(c) Explain the importance of a seed's physical properties in the seed industry. [4 Marks]

QUESTION TWO

Explain the development of seed from ovule primordial to a functional megaspore. [5 Marks]

QUESTION THREE

Describe the general composition of storage reserves seeds, their role and why they vary.

[6 Marks]

QUESTION FOUR

Describe the process of double fertilization in angiosperms. [7 Marks]

SECTION B: ANSWER ANY TWO QUESTIONS

QUESTION FIVE

(a) Explain the bisporic embryo sac formation and give the different types that can result from this form. [6 Marks]

(b) Explain the term seed physiological quality and describe different states of water found in a seed. [6 Marks]

(c) Describe the benefits of dormancy in seeds. [8 Marks]

QUESTION SIX

(a) Describe embryo sac development from a functional megaspore stage. [10 Marks]

(b) Discuss how seed dry weight is used to determine physiological maturity, challenges and how to overcome them. [10 Marks]

QUESTION SEVEN

(a) Describe how the embryo develops after fertilization to a mature seed and outline major parts of the mature seed. [8 Marks]

(b) Describe the factors that may influence flower induction in plants and give examples. [12 Marks]

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