

UNIVERSITY OF KWAZULU-NATAL
SCHOOL OF AGRICULTURAL, EARTH & ENVIRONMENTAL SCIENCES
DISCIPLINE OF CROP SCIENCE
FINAL EXAMINATION: NOVEMBER 2014
SUBJECT, COURSE & CODE: ADVANCED SEED TECHNOLOGY, AGPS 712

DURATION: 3 HOURS

TOTAL MARKS: 180

Internal Examiners: Professor Albert T. Modi

External Examiner: Professor A.L.P. Cairns

NOTE: THIS PAPER CONSISTS OF ONE (1) PAGE AND FOUR (4) QUESTIONS ONLY. ANSWER ALL QUESTIONS.

QUESTION 1 [40]

What is a seed? Your answer must show that you understand seed formation, development and composition from physiological, biochemical and morphological perspectives. Illustrations will enhance your discussion.

QUESTION 2 [40]

(a) After harvest maturity a seed is considered dormant. Give a contextual explanation of seed dormancy. Expand to give dormancy types. (20)

(b) Give a pattern of seed germination and explain the physiological and chemical events associated with seed germination in orthodox seeds. (20)

QUESTION 3 [40]

Discuss the concept of germplasm preservation. Use illustrations in your answer.

QUESTION 4 [60]

(a) Explain and illustrate hybrid seed production. (14)

(b) Use any crop as an example to explain the general steps in production of a hybrid seed for the purposes of bulking and marketing. Do not include seed testing at this stage. (20)

(c) Seed quality control is done by a seed analyst/technologist. List and briefly explain the four key seed quality tests performed in the laboratory. (14)

(d) What is seed certification? List and explain the different types of certified seed. (12)