



“Investing in Africa’s future”

COLLEGE OF HEALTH, AGRICULTURE AND NATURAL SCIENCES

NACP 306: SEED SCIENCE AND TECHNOLOGY

END OF SECOND SEMESTER FINAL EXAMINATIONS

APRIL 2023

LECTURER: W. MANYANGARIRWA

DURATION: 3 HOURS

INSTRUCTIONS

1. Answer All Questions in Section A, and,
2. Choose and Answer Any TWO Questions from Section B.

SECTION A

ANSWER ALL QUESTIONS IN THIS SECTION

1. Pannar Seed Company was contracted by the Government of the Democratic Republic of Congo to supply 500 tonnes of seed maize to Katanga Province. The seed was packed in 50 kg polypropylene bags. The Seed Services in Harare tested the submitted samples of PAN 53 maize variety to ascertain its quality. Give details on the following aspects.
 - a) The full scientific name that must be filled on the ISTA certificate. [2]
 - b) Minimum germination percentage for the seed to be certified. [1]
 - c) Type of ISTA certificate that must be used. [2]
 - d) Total number of duplicate samples submitted for testing (show your working). [4]
 - e) The expected purity percentage for the seed to be certified. [1]
 - f) Tools used by the seed inspectors to get the seed samples. [3]
 - g) The seed treatment chemicals that Pannar can use to treat the seed. [3]
 - h) Proper storage conditions for the seed when it arrives in DRC. [4]
 - i) Seed pack sizes that can be used for the seed to be distributed to small scale farmers with plots less than one hectare each. [3]
 - j) The expected moisture content range for the seed to be certified. [2]
2. Give the mandate crops for the following International Agricultural Research Centres; (i) CIMMYT, (ii) CIAT, (iii) ICRISAT, (iv) CIP, (v) IITA [5]
3. (ii) Write short notes on the following aspects; (a) Seed treatment, (b) Seed grading, (c) Seed storage. [15]
4. Outline the different types of instruments used in seed sampling, highlighting the various situations in which each instrument is used. [5]

SECTION B

ANSWER ANY TWO QUESTIONS FROM THIS SECTION

5. With reference to a crop that you have studied in detail, outline the seed production standards focusing on land requirements, field standards and laboratory standards. [25]
6. With reference to Seed health testing, give a concise outline of any two methods used to test seeds for the presence of seed-borne fungi. [25]
7. In most parts of sub-Saharan Africa, subsistence farmers are still reliant on seed donations. Many organizations are now shifting from seed donations to **seed fairs**. Give a concise justification for this shift in policy. [25]

8. You have been hired as a consultant to develop the seed industry in Somalia. Give an outline of the steps that you would follow, borrowing lessons from the development of the seed industry in Zimbabwe. [25]

End of Examination Paper