THE UNITED REPUBLIC OF TANZANIA

NATIONAL EXAMINATIONS COUNCIL

ADVANCED CERTIFICATE OF SECONDARY EDUCATION EXAMINATION

134/3 **AGRICULTURE 3**

(For Both School and Private Candidates)

Time: 3 Hours **Year: 2005**

Instructions

1. This paper consists of sections **three (3)** questions.
2. Answer **two (2)** questions.
3. Question one (1) carries **twenty (20)** marks and questions **two (2)** and **three (3)** carries **fifteen (15)** marks each.
4. Non-programable calculators may be used.
5. Cellular phones are **not** allowed in the examination room.
6. Write your **Examination Number** on every page of your answer booklet(s).

1. You are provided with specimens: H1, H2, H3, I1, I2, I3, I4, J1, J2, J3, J4, and J5.

   (a) (i) Identify specimens H1, H2, and H3

   (ii) State two types of specimen H1 and their functions in soil fertility

   (iii) Outline three indicators that would show specimen H1 is no longer effective

   (iv) Name the unit of the tractor system in which specimen H3 is used and explain its principle

   (b) (i) Identify specimens I2, I3, and I4

   (ii) State the uses of specimens I1, I2, and I4

   (iii) Differentiate between the functions of specimens I3 and I4

   (c) (i) Identify specimens J1, J2, J3, and J4

   (ii) Show their correct arrangement and indicate the type of fitting used when joining specimen J5

2. You are provided with specimens: K1, K2, L1, L2, and L3, and the following apparatus: 100 cm^3 measuring cylinder, 100 cm^3 beaker, stirring rod, spatula, distilled water, and blue and red litmus papers.

   Procedure:

   (i) Measure 50 cm^3 of distilled water and pour it into a beaker.

   (ii) Add five spatulafuls of specimen K1 into the water and stir thoroughly.

   (iii) Dip red and blue litmus papers into the mixture and record observations.

   Questions:

   (a) Record the observations of both litmus papers

   (b) State the pH of specimen K1 based on your observations

   (c) Explain, in two points, why farmers use specimen K1 in soils for cabbage production

   (d) State why the specimen may not be suitable for coffee grown in semi-arid regions

   (e) Suggest a management practice to address the limitation in part (d)

   (f) State three precautions to observe when using specimen K1

   (g) Write three functions of the nutrient elements present in specimen K1

3. You are provided with specimens: M1, M2, N1, N2, and N3.

   Procedure:

   (i) Measure the spacing between and within rows for plants in experimental setups M1 and M2 using a ruler.

   (ii) Record the number of plants that can be grown per hectare for setup M1.

   (iii) Calculate the viable seed requirement for setup M2 if each seed weighs 0.5 g.

   Questions:

   (a) Record the spacing measurements for both setups

   (b) Calculate the plant population per hectare for setup M1

   (c) Calculate the seed requirement per hectare for setup M2

   (d) Explain five factors that guide farmers in determining the plant spacing