THE UNITED REPUBLIC OF TANZANIA

NATIONAL EXAMINATIONS COUNCIL OF TANZANIA

ADVANCED CERTIFICATE OF SECONDARY EDUCATION EXAMINATION

134/3 **AGRICULTURE 3**

(For Both School and Private candidates)

Time: 3 Hours **Year: 2023**

Instructions

1. This paper consists of **three (3)** questions.
2. Answer **two (2)** questions.
3. Question **one (1)** carries twenty marks and question two (2) and three(3) carry **fifteen (15)** marks each.
4. Non-programmable calculators may be used.
5. Write your **Examination Number** on every page of your answer booklet (s)

1. You are provided with the following specimen, apparatuses and materials: X, 100 cm^3 beaker, 100 cm^3 measuring cylinder, spatula, stirring rod, blue and red litmus paper and distilled water. Carry out procedures hereafter and answer questions that follow:

   Procedures:

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

   (ii) Put five spatulaful of specimen X into a beaker containing distilled water.

   (iii) Stir the mixture well.

   (iv) Deep each of the red and blue litmus paper into the mixture and make observation.

Questions:

(a) Record the observations in the following table:

Experiment with litmus papers	Observations
Red litmus paper	
Blue litmus paper	

(b) Btate the pH of the specimen from the result of the experiment.

(c) Briefly explain, in two points, the intension of farmers to use specimen **X** in the soil when growing cabbage in Kilimanjaro, Mbeya, Bukoba and Rungwe.

(d) Why farmers living in semi desert areas are not advised to use specimen **X** when growing coffee crop?

(e) Suggest by giving a reason, in reference to part (d), the suitable management practices to be adopted by farmers.

(f) Give three precautions to be observed when using specimen **X** in the soil.

(g) Write down three functions of each of the important nutrient elements that are contained in specimen **X.**

2. You are provided with experimental set up 1 and 2 with plants planted in two rows and 30 cm ruler. Perform procedures and answer questions that follow:

Procedure:

Use the ruler to measure the plant spacing between and within rows in the experimental set up 1 and 2.

Questions

(a) Record the results obtained in the stated procedure in the table provided:

Experimental set up	Between rows spacing (cm)	Within rows spacing (cm)
1		
2		

(b) Calculate, by referring to the experimental set up 1, the number of plants which will be available if the farmer has established 1 ha of pastureland.

(c)) Calculate, by referring to the experimental set up 2, the amount of viable seeds in kg that will be required to plant 1 ha of pastureland if each seed that germinates into the plant seedling weighs 0.5g.

(d) Briefly explain the five factors that guide farmers in deciding the spacing to be used for a certain crop.

3. You are provided with specimen **C** with the following scenario: When fruits of specimen C began to mature, a farmer observed abnormalities in the field. Careful examination of the sample specimen by the plant pathologist indicated injuries to the roots and upon cutting the stem base and soaking it into water, a sticky, milk-white substance oozed into water.

Assuming you are a plant pathologist:

(a) Outline three observable signs of the disease in specimen **C**.

(b) Identify the problem facing specimen **C** based on the signs and diagnostic examination observed.

(c) Give the scientific name of the causative agent facing specimen **C**.

(d) Briefly explain to the farmer how the specimen became infected with the agent.