THE UNITED REPUBLIC OF TANZANIA

NATIONAL EXAMINATIONS COUNCIL OF TANZANIA

CERTIFICATE OF SECONDARY EDUCATION EXAMINATION

034/2 **AGRICULTURAL SCIENCE 2**

(ACTUAL PRACTICAL 2)

(For Both School and Private candidates)

Time: 3 Hours **Year: 2022**

Instructions

1. This paper consists of **two (2)** questions**.**
2. Answer **all** questions**.**
3. Each question carries twenty **five (25)** marks**.**
4. Cellular phones, and any unauthorized materials are **not** allowed in the examination room.
5. Write your **Examination Number** on every page of your answer booklet (s)

1. You are provided with the specimens, apparatuses and materials as follows: **A, B,** Measuring cylinder, Beaker, distilled water and Stirring rod. Perform the following procedures and answer the questions that follow:

Procedures

(i) Put 100 cm^3 of water in the 250 cm^3 measuring cylinder.

(ii) Using a beaker, put soil sample **A** up to 100 cm^3 mark and pour the soil into the 250 cm^3 measuring cylinder with 100 cm^3 of water.

(iii) Record the volume of the mixture in the measuring cylinder.

(iv) Repeat steps (i) –(iii) using soil sample **B**.

(v) Cover the mouth of the measuring cylinder with a hand and shake well, do it for both cylinders.

(vi) Stir the mixtures with a stirring rod so that all the bubbles come out.

(vii) After all the bubbles have escaped, record the final reading of the mixture in both cylinders.

Questions

i) What caused the bubbles to come out?

ii) Why did you stir the mixture for bubbles to come out?

iii) Comment with reason on the volume of the mixture before and after shaking and stirring in both cylinders.

iv) Compare the volume of bubbles lost in soil samples **A** and **B**. Give reasons to support your answers.

v) State the relationship between bubbles that have been lost in the experiment and water in the soil.

vi) What conclusion can you draw from the experiment you have done?

(b) You are provided with specimen **G** filled with water and bucket. Perform the following procedures and answer the questions that follows:

Procedures

(i) Strap specimen **G** in the back in a comfortable position.

(ii) Use the handle to pump up and down until it becomes hard to do so, then stop.

(iii) Direct the lance into the bucket provided.

(iv) Press the trigger control to release the content in the tank into the bucket and observe its flow for one minute.

(v) Unstrap the specimen.

Questions

(i) Briefly describe the purpose of doing procedure (ii).

(ii) Assume you are spraying pesticide on crops in the field (procedure (iv)), outline three important safety precautions would you have to consider.

(iii) How would you care for and maintain part of specimen G that disperses liquid spray into the spray area? Give six points .