THE UNITED REPUBLIC OF TANZANIA

NATIONAL EXAMINATIONS COUNCIL

ADVANCED CERTIFICATE OF SECONDARY EDUCATION EXAMINATION

134/2 **AGRICULTURE 2**

(For Both School and Private Candidates)

Time : 3 Hours **ANSWERS** **Year : 2013**

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).

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Prepared by Maria Marco for TETEA

1. You are provided with specimens: Q1, Q2, Q3, Q4, and Q5.

(a) (i) Identify specimens Q1 and Q2

Q1 is Urea fertilizer, while Q2 is Triple Superphosphate (TSP). Urea provides nitrogen to crops for vegetative growth, and TSP supplies phosphorus to support root development and flowering.

(ii) State two functions of specimen Q2 in soil fertility improvement

TSP (Q2) enhances root growth by providing phosphorus, which is essential for energy transfer in plants. It also improves early plant establishment and increases flowering and fruiting capacity.

(iii) Outline three disadvantages of using specimen Q1 in excess quantities

Excess urea can cause leaf burn due to high nitrogen concentration. It can also lead to excessive vegetative growth at the expense of flowers or fruits. Furthermore, overuse may cause soil acidification and nutrient imbalance, affecting long-term soil fertility.

(b) (i) Identify specimen Q3 by its common name

Q3 is cassava, a staple root crop grown for its edible tuberous roots.

(ii) Mention one disease associated with Q3 and its causal organism

Cassava mosaic disease affects Q3, caused by the cassava mosaic virus (CMV).

(iii) Give two methods of controlling the disease in Q3

Control measures include planting virus-free or resistant cassava varieties and removing infected plants to prevent virus spread.

(c) (i) Identify specimens Q4 and Q5

Q4 is a maize weevil (Sitophilus zeamais), and Q5 is a larger grain borer (Prostephanus truncatus). Both are common pests of stored grains.

(ii) Differentiate between the roles of specimens Q4 and Q5 in crop protection

Q4 primarily attacks maize and other stored grains by boring and consuming them, while Q5 is more destructive, capable of attacking both stored grains and cassava chips. Q4 is less mobile, whereas Q5 spreads quickly and can cause severe storage losses.

2. You are provided with specimens: R1, R2, and R3.

(a) (i) Identify specimens R1 and R2

R1 is CAN fertilizer (Calcium Ammonium Nitrate), and R2 is DAP (Diammonium Phosphate).

(ii) Give three reasons why farmers prefer using specimen R2 compared to specimen R1

Farmers prefer DAP because it supplies both phosphorus and nitrogen in a single application, enhancing root development and early growth. DAP also has less risk of leaf burn compared to CAN and is easy to store and handle.

(iii) State the effect of specimen R1 when applied during the flowering stage of crops

Applying CAN during flowering may cause excessive vegetative growth, delay flowering, and reduce fruit or seed set due to nutrient imbalance.

(b) (i) Name specimen R3 by its botanical name

R3 is maize, botanically known as Zea mays.

(ii) State one major pest associated with specimen R3

The maize stem borer (Busseola fusca) is a major pest of maize.

(iii) Mention two crops commonly attacked by the pest in R3

Maize and sorghum are the main crops attacked by the stem borer.

3. You are provided with specimens: S1, S2, S3, and S4.

(a) (i) Identify each specimen S1, S2, S3, and S4

S1 is Napier grass (Pennisetum purpureum), S2 is a pesticide (e.g., Malathion), S3 is Rhodes grass (Chloris gayana), and S4 is a tsetse fly (Glossina morsitans).

(ii) Give two uses of specimen S1 on the farm

Napier grass is used as a high-protein forage for livestock and as a soil cover to reduce erosion.

(iii) State three precautions to be observed when handling specimen S2

When handling pesticides, wear protective clothing such as gloves and masks. Avoid inhalation and ingestion. Store chemicals safely away from children and feed.

(b) (i) Describe how specimen S4 could damage farm animals

Tsetse flies bite livestock to suck blood, transmitting trypanosome parasites that cause sleeping sickness (nagana), leading to weakness, weight loss, and sometimes death.

(ii) Mention two ways of controlling specimen S4

Control measures include spraying insecticides on animals and using tsetse traps to reduce fly populations. Clearing bushy areas where flies breed also reduces infestation.

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