THE UNITED REPUBLIC OF TANZANIA

NATIONAL EXAMINATIONS COUNCIL OF TANZANIA

CERTIFICATE OF SECONDARY EDUCATION EXAMINATION

034/2 **AGRICULTURE 2**

Time : 2:15 Hours **ANSWERS** **Year : 2009**

Instructions

1. This paper consists three questions.
2. Answer **two** questions.
3. Communication devices and any unauthorised materials are **not** allowed in the examination room.
4. Write your **Examination Number** on every page of your answer booklet(s).

1. You are provided with the specimens D_1, D_2, D_3, D_4, D_5, D_6 and D_7. Study them carefully and then answer the question that follow:

(a) (i) Identify each of the specimens D_1, D_2, D_3, D_4 and D_5.

Specimen D_1 is maize.

Specimen D_2 is bean.

Specimen D_3 is groundnut.

Specimen D_4 is sorghum.

Specimen D_5 is cowpea.

(ii) Classify the specimens D_1, D_2, D_3, D_4 and D_5 into their respective classes basing on botanical characteristics and their uses.

Specimen D_1 and D_4 are cereals.

Specimen D_2, D_3 and D_5 are legumes.

(iii) Name one main pest attacking each of the specimens D_1, D_2, D_3, D_4 and D_5.

The maize stalk borer attacks maize.

The bean bruchid attacks beans.

The groundnut aphid attacks groundnuts.

The sorghum midge attacks sorghum.

The cowpea weevil attacks cowpeas.

(iv) Give one (1) control measure for each of the pests named in (a) (iii) above.

Crop rotation controls maize stalk borers.

Airtight storage controls bean bruchids.

Spraying insecticides controls groundnut aphids.

Early planting controls sorghum midges.

Sun-drying grains controls cowpea weevils.

(v) State the mode of propagation for each of the specimens D_1, D_2, D_3, D_4 and D_5.

All these crops are propagated by seeds.

(b) Refer to specimen D_6 and D_7.

(i) Identify them by their scientific and common names.

Specimen D_6 is Striga hermonthica (witch weed).

Specimen D_7 is Alectra vogelii (parasitic weed).

(ii) Give the general name for specimens D_6 and D_7.

They are parasitic weeds.

(iii) State four (4) harmful effects of specimens D_6 and D_7 to crop plants.

They compete with crops for nutrients.

They reduce crop yields significantly.

They weaken the host plant, leading to stunted growth.

They lower the quality of harvested crops.

(iv) Explain one method you would take to control each of the specimens D_6 and D_7 in a field of coffee.

Crop rotation with non-host crops helps control Striga.

Hand pulling of weeds before flowering helps control Alectra.

2. You are provided with specimens E_1, E_2, E_3, E_4, E_5 and E_6. Observe them carefully and then answer the questions that follow:

(a) (i) Identify each of the specimens E_1, E_2 and E_6.

Specimen E_1 is the rumen.

Specimen E_2 is the reticulum.

Specimen E_6 is the abomasum.

(ii) Give classes of animals which possess specimens E_1 and E_2 in their alimentary canal.

These specimens are found in ruminants such as cattle, sheep and goats.

(iii) State the function of each of specimens E_1 and E_2 in animals.

The rumen (E_1) ferments fibrous feeds with the help of microbes.

The reticulum (E_2) traps foreign materials and aids in regurgitation for rumination.

(iv) How is the specimen E_1 adapted to the function it performs?

The rumen is large and has a high microbial population to ferment cellulose efficiently.

(b) Refer to specimen E_3, E_4, E_5 and E_6.

(i) Identify each of the specimens E_3, E_4 and E_5.
Specimen E_3 is the omasum.
Specimen E_4 is the pancreas.
Specimen E_5 is the small intestine.

(ii) What is the function of each of the specimen E_5 and E_6 in livestock management?
The small intestine (E_5) absorbs nutrients into the bloodstream.
The abomasum (E_6) secretes gastric juices that digest proteins.

(iii) Name the diseases which are cured by using each of the specimens E_3 and E_4.
Specimen E_3 (omasum) helps prevent omasal impaction.
Specimen E_4 (pancreas) when treated prevents diabetes mellitus in animals.

(iv) What is the causative agent of a disease cured by E_3?
The causative agent is poor feeding practices that cause indigestion leading to impaction.

(v) List other three (3) diseases which are transmitted by the same vector as the one which is caused by the agent named in (b) (iv) above.
Trypanosomiasis, nagana, and sleeping sickness are transmitted by tsetse flies.

(vi) Explain three (3) advantages of the practice done using specimen E_6 in dairy cattle management.
The abomasum digestion ensures proteins are broken down, improving milk production.
It supports efficient feed utilization, reducing feed costs.
It enables young calves to digest milk easily, supporting growth.

3. You are provided with the specimen F_1, F_2, F_3, F_4, F_5, F_6 and F_7. Observe them carefully and then answer the questions that follow:

(a) (i) Identify each of the specimens F_1, F_2, F_3, F_4 and F_5.
Specimen F_1 is a ranging pole.
Specimen F_2 is a tape measure.
Specimen F_3 is a compass.

Specimen F_4 is a theodolite.
Specimen F_5 is a surveyor's chain.

(ii) Which specimens among the specimens F_1, F_2, F_3, F_4 and F_5 are used in surveying?
All the five specimens F_1, F_2, F_3, F_4 and F_5 are used in surveying.

(iii) Which specimens are used in wood work?
The tape measure (F_2) is used in wood work.

(iv) Explain briefly the specific function(s) of each of the specimens F_1, F_2, F_3, F_4 and F_5.
The ranging pole (F_1) is used for sighting straight lines in surveying.
The tape measure (F_2) is used for measuring length and distances.
The compass (F_3) is used to determine directions.
The theodolite (F_4) is used for measuring horizontal and vertical angles.
The surveyor's chain (F_5) is used for measuring land distances.

(b) Refer to specimens F_6 and F_7.

(i) Identify each specimen.
Specimen F_6 is compost manure.
Specimen F_7 is fertilizer.

(ii) Which specimen contains more plant nutrients?
Fertilizer (F_7) contains more concentrated plant nutrients.

(iii) State three (3) properties of specimen F_7.
Fertilizer is soluble in water.
It contains specific nutrients like nitrogen, phosphorus and potassium.
It is fast-acting when applied to soil.

(iv) Which specimen is the best for crop production? Give three (3) reasons.
Compost manure (F_6) is the best for crop production. It improves soil structure. It increases soil organic matter. It supports microbial activity for long-term fertility.