

THE UNITED REPUBLIC OF TANZANIA
NATIONAL EXAMINATIONS COUNCIL OF TANZANIA
CERTIFICATE OF SECONDARY EDUCATION EXAMINATION

034/1

AGRICULTURAL SCIENCE 1

Time: 3 Hours

Monday, 18th November 2019 p.m.

Instructions

1. This paper consists of sections A, B and C with a total of **eleven (11)** questions.
2. Answer **all** questions in sections A and B and **one (1)** question from section C.
3. Sections A and C carry 15 marks each and section B carries 70 marks.
4. Cellular phones and any unauthorised materials are **not** allowed in the examination room.
5. Write your **Examination Number** on every page of your answer booklet(s).



SECTION A (15 Marks)

Answer **all** questions in this section.

1. For each of the items (i)-(x), choose the correct answer from among the given alternatives and write its letter besides the item number in the answer booklet provided.

(i) Which of the following crops are considered to belong to grass family crops?

- (1) Cassava
- (2) Sorghum
- (3) Beans
- (4) Paddy
- (5) Sweet potatoes

- A (1) and (2)
- B (2), (3) and (5)
- C (2) and (4)
- D (3) and (4)
- E (3) and (5)

(ii) What does plumbing process involves?

- A Connecting and joining timbers to make a furniture.
- B Construction of various structures by using blocks or bricks.
- C Joining two pieces of metal by melting them together with a filler rod.
- D Striking metal to form tools.
- E The cutting, threading and fitting pipes.

(iii) How does monocropping differ from other systems of cropping?

- A One annual crop is grown on the field after another annual crop has been harvested.
- B Different types of crops are grown on the same field in successive seasons or years.
- C Two or more types of crops are grown on the field at the same time.
- D One annual crop is grown on the field season after season or year after year.
- E Different types of crops are grown on the field in a specific and systemic pattern.

(iv) How is artificial insemination in animals' farm is done?

- A By collecting sperms from the bulling by artificial means.
- B By extracting egg from the female and producing off spring artificially.
- C By transplanting embryo to a cow which cannot conceive to produce off spring.
- D By depositing sperm at the appropriate part of the female reproductive tract.
- E By the fusion of egg and sperms to produce embryo artificially.

(v) Forest crop production involves various post tending operations. Which management practices in forest production refers to replacement of dead trees in the field?

- A Thinning
- B Beating up
- C Pricking out
- D Hardening off
- E Pruning

- (vi) What should be done to correct acidic soil so that it become suitable for growing agricultural crops and microbial activities?
- A Liming B Salinisation C Alkalinisation
D Acidification E Conversion
- (vii) Which one is a good quality of the roughage feeds staff given to the farm animals?
- A Rich in crude protein.
B High fibre content and high in energy.
C Rich in energy and protein.
D Rich in protein and fibre content.
E High in fibre content and low in energy.
- (viii) Which diseases belong to group of diseases caused by viruses in cattle?
- A Rinderpest and Rabies
B Anthrax and coccidiosis
C Black Quarter and Pneumonia
D Trypanosomiasis and East Coast Fever
E Anaplasmosis and Brucellosis
- (ix) The following are the effects of poor waste disposal **except**
- A make the environment dirty.
B provide breeding group for diseases.
C pollute soil and water.
D wastes can harm wild animals.
E reduces the cost of recycle materials.
- (x) Which one is an example of uncertainty in the farm?
- A Theft
B Fire outbreaks
C Accidents
D Health of the farmer and his family
E Price fluctuations

2. Match the items in **List A** with the responses in **List B** by writing the letter of the correct response beside the item number in the answer booklet provided.

List A	List B
(i) An individual gets a vague idea about innovation but lacks enough information on that innovation.	A Trial
(ii) An individual becomes desirous in the innovation and looks for more information.	B Awareness
(iii) An individual mentally thinks about applying the ideas for his or her own situation.	C Adoption
(iv) An individual attempts the innovation on small scale.	D Compatibility
(v) An individual decides to use the innovation on a full scale.	E Observability
	F Evaluation
	G Interest

SECTION B (70 Marks)

Answer **all** questions in this section.

3. The following table presents different practices observed in agricultural fields.

Field	Practice
1	Tomato plant were irregularly watered.
2	Organic manure used on soil growing carrot plants.
3	More than one varieties of sweet pepper were grown on the same piece of land at the same time.
4	Nitrogenous fertilizer was applied on soil grown cassava crop plants.
5	Sunflower crop plants grown on a wet weather condition.

Identify the problem that can arise in each case.

(10 marks)

4. (a) One farm was analyzed for nutrients content and the result showed that the soil had deficiency in phosphorus. What deficiency symptoms would you expect to observe if maize plants were to be grown on such farm. Give five points. (5 marks)
- (b) Give five roles of calcium in plants. (5 marks)
5. (a) The school is planning to buy Friesian breed of cattle. Suggest six features required to build a suitable house for the cattle. (6 marks)
- (b) A livestock farmer is facing a problem on diseases and parasites control. In four points, advice the farmer on proper control measures to be taken. (4 marks)

6. (a) An extension officer advised farmers to change their ways of doing farm operations from human power to mechanical assistance. Give six reasons to support the advice given by the extension officer. **(6 marks)**
- (b) Account for factors that limit the effectiveness of farm mechanization in agricultural production. Use four points. **(4 marks)**
7. A farmer planted 2 hectares of maize. In raising the crop, he bought seeds for Tshs. 120,000.00, fertilizer Tshs. 460,000.00, insecticide Tshs. 20,000.00, weeding costs 80,000.00 and harvesting costs Tshs. 200,000.00. The total yield was 60 bags of 100 kg each. The maize was bought by the local co-operative society at Tshs. 500 per kg. Calculate the gross margin per hectare. **(10 marks)**
8. Form Four students were processing fish specimen to preserve in a laboratory for experiment. During the practice, one student was injured by a knife on the hand and the wound was bleeding severely.
- (a) Briefly describe how you would render first aid to an injured student. **(8 marks)**
- (b) Outline any other four accidents that are likely to occur in agricultural science laboratory. **(2 marks)**
9. (a) Deforestation has led to land degradation in most arable lands of Tanzania. How will you advice people in your community on the importance of trees in soil and water conservation. Give seven points. **(7 marks)**
- (b) Briefly explain three importance of soil and water conservation. **(3 marks)**

SECTION C (15 Marks)

Answer **one (1)** question from this section.

10. Diseases are among the challenges facing livestock keepers at a farm level in Tanzania. As a veterinary expert, advice famers on how to detect a sick animal. Give six points. **(15 marks)**
11. Weeds are the most crucial enemies in crop production. Advise farmers on six cultural weed control measures they can employ to improve production. **(15 marks)**