

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

034/1

**AGRICULTURAL SCIENCE 1**  
(For Both School and Private Candidates)

**Time: 2:30 Hours**

**Monday, 13<sup>th</sup> November 2017 p.m.**

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**Instructions**

1. This paper consists of sections A, B and C with a total of **thirteen (13)** questions.
2. Answer **all** questions in sections A and B and **one (1)** question from section C.
3. Read the instructions under each section carefully.
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).

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## SECTION A (20 Marks)

Answer **all** questions in this section.

1. For each of the items (i) - (x), choose the correct answer among the given alternatives and write its letter beside the item number in the answer booklet provided.
- (i) A crop that lives for more than two years in the field is known as  
A cash crop. B food crop. C annual crop.  
D biannual crop. E perennial crop.
- (ii) The common sickness symptom in livestock is  
A continuous salivation. B loss of appetite. C anaemia.  
D body itching. E discharge of tears.
- (iii) The degree to which the technical advice of the extension worker is believed by the clients is referred to as  
A sympathy. B commitment. C empathy.  
D enthusiasm. E credibility.
- (iv) Prices that traders pay when they buy goods at the sites of production are termed as  
A retail prices. B market prices.  
C farmgate prices. D wholesale prices.  
E shadow prices.
- (v) Which one of the following transforms reciprocating motion into rotary motion in an engine?  
A Flywheel B Push rod C Crank shaft  
D Cam shaft E Timing gear
- (vi) What is the common similarity among all soils?  
A They are made up of small particles.  
B They retain water equally  
C They are made from rocks.  
D They are made from rocks.  
E They have the same volume of air spaces.
- (vii) Which one of the following is a task of a drone?  
A Cleaning the cells B Mating and fertilize the queen  
C Nectar reception D Feeding breed queen  
E Comb building
- (viii) Which one is the effect of soil erosion?  
A Rendering land unsuitable for agricultural production.  
B Decrease siltation of dams, streams, rivers and lakes.  
C Increase stability of plants roots.  
D Accumulation of nutrients to the deep soil.  
E Loss of fertile deep soil.

- (ix) Which question is to be asked by the farmer as a producer upon choosing the technique to employ in production?
- A What to produce?
  - B How much to produce?
  - C How to produce?
  - D What price to sell?
  - E How much of each input to use?
- (x) What does the term 'lard' mean in pig husbandry?
- A fat
  - B skin
  - C hair
  - D milk
  - E meat

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

LIST A	LIST B
(i) The element that promotes the uptake of nutrients in plants.	A. Phosphorus
(ii) The element which strengthens the cell walls so that the straw becomes stiff and resistant to lodging.	B. Nitrogen
(iii) The element which is an essential catalyst in the production of chlorophyll in plants.	C. Hydrogen
(iv) The element that promotes vegetative growth and encourages the development of good quality leaves.	D. Copper
(v) The element that promotes the formation of roots and seeds and stimulates flowering in plants.	E. Oxygen
(vi) The element which increases the efficiency of the leaf in the manufacturing of sugars and starch in plants.	F. Zinc
(vii) The element that activates protein digestive enzymes in plants.	G. Molybdenum
(viii) The element which is a very important constituent in the production of energy in plants.	H. Magnesium
(ix) The element that catalyses oxidation processes in plant cells and regulates sugar consumption in plants.	I. Carbon
(x) The element which is involved in many physiological functions of the plants.	J. Potassium
	K. Cobalt
	L. Iron
	M. Sulphur
	N. Manganese
	O. Calcium

### SECTION B (60 Marks)

Answer **all** questions in this section.

3. (a) What is meant by 'soil formation'? **(1 mark)**
- (b) Account for five factors that influence soil formation **(5 marks)**
4. (a) What are the agricultural extension teaching methods? **(1 mark)**
- (b) Elaborate the purpose of each of the following agricultural extension teaching methods and in each give four ways in which it can be conducted.
- (i) Mass methods
- (ii) Individual methods **(6 marks)**

5. (a) Give the meaning of the following terms as they are used in poultry production.
- (i) Incubation
  - (ii) Brooder
  - (iii) Broody hen **(3 marks)**
- (b) (i) What do you understand by natural brooding? **(1 mark)**  
(ii) Examine four disadvantages of natural brooding. **(4 marks)**
6. (a) Give the mathematical expression of elasticity of demand. **(3 marks)**
- (b) Briefly describe the following types of elasticity of demand and make sketches to illustrate your answer.
- (i) Elastic demand
  - (ii) Unitary demand
  - (iii) Inelastic demand **(6 marks)**
7. (a) Account for six factors to be considered when siting an apiary in the farm. **(6 marks)**
- (b) Briefly explain three human activities causing destruction of fisheries in Tanzania. **(3 marks)**
8. (a) Briefly describe how the four agents of erosion cause soil erosion. **(4 marks)**
- (b) Assess three ways in which trees contribute in controlling soil erosion. **(3 marks)**
9. (a) State four advantages of using an ox as a source of power in the farm. **(4 marks)**
- (b) Point out the service required in the following parts of a tractor.
- (i) Radiator
  - (ii) Fan belt
  - (iii) Tyres **(3 marks)**
10. (a) (i) What is the meaning of cultural pest control? **(1 mark)**  
(ii) Elaborate the basic principle behind cultural pest control. **(1 mark)**  
(iii) Briefly explain the mechanism of using trap crops as a pest control method. **(2 marks)**
- (b) Stainers are insect pests causing destruction to different crops.
- (i) Name two common crops attacked by stainers.
  - (ii) State one effect of stainers on crops they attack.
  - (iii) Suggest one cultural control measure for stainers. **(3 marks)**

### SECTION C (20 Marks)

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

11. Extension teaching methods are often classified in terms of the target audience. Describe the extension teaching method which targets a large number of people in different locations.
12. Account for eight human activities that cause degradation on land and suggest seven ways of managing land degradation caused human activities.
13. Weeds are both enemies and friends in crop and animal production. Discuss this statement giving relevant examples.