



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

134/2

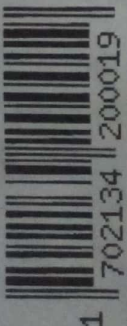
AGRICULTURE 2
(For Both School and Private Candidates)

Thursday, 04th May 2017 p.m.

Time: 3 Hours

Instructions

1. This paper consists of **ten (10)** questions in sections A and B.
2. Answer **five (5)** questions choosing at least **two (2)** questions from each section.
3. Each question carries **twenty (20)** marks.
4. Cellular phones are **not** allowed in the examination room.
5. Write your **Examination Number** on every page of your answer booklet(s).



SECTION A
CROP SCIENCE AND PRODUCTION

Answer at least **two (2)** questions from this section.

1. (a) Write the meaning of the following terms as applied in crop pests.
- (i) Key pests
 - (ii) Minor pests
 - (iii) Occasional pests
 - (iv) Potential pests
- (8 marks)**
- (b) Identify the crop and damage caused by each of the following pest.
- (i) *Prostephanus truncatus*
 - (ii) *Acanthoscelides obtectus*
 - (iii) *Heliothis armigera*
 - (iv) *Dysdercus fasciatus*
- (6 marks)**
- (c) Show six cultural methods of insect pests control that can be applied by small farmers.
- (6 marks)**
2. (a) Briefly explain the following terms as applied in plant breeding:
- (i) Selection
 - (ii) Hybridization
 - (iii) Mass selection
 - (iv) Apomixis
 - (v) An inbreed line
 - (vi) Gene
- (12 marks)**
- (b) Mention three methods of plant breeding which is appropriate for progeny testing.
- (3 marks)**
- (c) Explain three advantages and two disadvantages of progeny testing.
- (5 marks)**
3. (a) Assess the effectiveness of the following methodology in plant disease controls:
- (i) Manuring
 - (ii) Dead season
 - (iii) Quarantine and legislation
 - (iv) Use of clean planting materials
 - (v) Early planting
- (10 marks)**
- (b) Give a brief summary on each of the following plant diseases by clearly explaining the nature, symptoms and control measures.
- (i) Maize streak
 - (ii) Common leaf rust
 - (iii) Common smut

- (iv) Rice blast
- (v) Leaf blight

(10 marks)

4. (a) Describe the following terms as used in weed science:

- (i) Crop rotation
- (ii) Mulching

(4 marks)

(b) (i) Explain the meaning of the "biological control of weeds as used in crop production. (2 marks)

(ii) What are the two potential benefits of biological methods of weed control? (2 marks)

(iii) Suggest four limitations of biological control methods. (4 marks)

(c) Describe four basic categories used in classifying herbicides. (8 marks)

5. (a) Briefly explain three major groups of parasitic fungi by giving vivid examples. (6 marks)

(b) Outline the following:

(i) Five visible outcomes of a viral infection on a plant. (5 marks)

(ii) Three visible outcomes of a bacterial infection on a plant. (3 marks)

(iii) Four indicators of nutritional disorders. (2 marks)

(c) How do the following cause diseases in plants?

(i) Flooding

(ii) Chemicals

(iii) Poor weather

(iv) Stress

(4 marks)

SECTION B

LIVESTOCK SCIENCE AND PRODUCTION

Answer at least **two (2)** questions from this section.

6. (a) Distinguish between organic farming and sustainable agricultural production. (4 marks)

(b) Briefly explain five ways in which sustainable agricultural production can be helpful to farmers. (10 marks)

(c) Account for six characteristics of organic farming. (6 marks)

7. (a) Analyse effects of parasites on the livestock. (5 marks)

(b) Describe four ways which can be employed to eradicate tsetse flies in a grazing area. (4 marks)

(c) (i) Briefly explain six conditions that assist farmers to identify sick animals in their farms. (6 marks)

(ii) Identify three symptoms associated with New Castle Disease in poultry. (3 marks)

- (iii) Suggest appropriate measures that can be taken to eliminate New Castle Disease in poultry farms. (2 marks)

8. (a) Give the meaning of the following terms as used in animal nutrition:

- (i) Rumination
- (ii) Balanced ration
- (iii) Ration (4 marks)
- (iv) Roughages

(b) Briefly describe four functions of calcium in animal body. (4 marks)

(c) Enumerate four deficiency symptoms of calcium in farm animals. (4 marks)

(d) Explain four functions of water in animal body. (8 marks)

9. (a) Briefly explain the roles played by each of the following reproductive organs of hen in egg formation.

- (i) Infundibulum
- (ii) Magnum
- (iii) Isthmus
- (iv) Shell gland (4 marks)

(b) Account for the events that take place in each of the five phases of oestrus cycle. (10 marks)

(c) Enumerate four hormones which play roles in oestrus cycle of a cow and briefly describe the role of each hormone. (6 marks)

10. (a) Analyse five characteristics of a good pasture suitable for high milk yielding cows. (7.5 marks)

(b) Enumerate nine principles underlying pasture improvement for both natural and cultivated pasture. (4.5 marks)

(c) Briefly explain four effective measures that may be used to control weeds in pastures. (4 marks)

(d) Identify four benefits of applying rotational grazing in the pasture. (4 marks)