

**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

Year: 2008

Instructions

1. This paper consists of sections **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).

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SECTION A
CROP SCIENCE AND PRODUCTION

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

1. (a) Define the following terms as applied in crop protection:
 - (i) Integrated pest management (IPM)
 - (ii) Secondary pests
 - (iii) Host range
 - (iv) Vector
(b) Identify three insect pests of maize and describe the type of damage each causes.

(c) State and explain three limitations of IPM in smallholder farming.

2. (a) Describe briefly the following plant breeding methods:
 - (i) Pure line selection
 - (ii) Backcrossing
 - (iii) Recurrent selection
 - (iv) Tissue culture
(b) List three objectives of hybridization in crops.

(c) Explain two limitations of using tissue culture in breeding.

3. (a) Assess the effectiveness of crop sanitation and roguing in controlling plant diseases.

(b) For each of the following plant diseases, describe causative agent, symptoms, and control:
 - (i) Banana wilt
 - (ii) Tomato late blight
 - (iii) Bean anthracnose

4. (a) Define:
- (i) Annual weeds
 - (ii) Biennial weeds
 - (iii) Perennial weeds
- (b) Explain:
- (i) Preventive methods of weed control
 - (ii) Five disadvantages of chemical weed control
- (c) Outline four effects of weeds on crop production.
5. (a) Explain two major groups of non-parasitic plant diseases with examples.
- (b) Outline:
- (i) Three viral diseases of vegetables
 - (ii) Four bacterial diseases of fruits
 - (iii) Four micronutrient deficiencies in crops and their visible symptoms
- (c) Describe the nature, symptoms, and control of bacterial blight in cotton.

SECTION B
LIVESTOCK SCIENCE AND PRODUCTION

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

6. (a) Distinguish between zero grazing and semi-zero grazing systems.
- (b) Explain six advantages of zero grazing system.
- (c) Mention four constraints associated with zero grazing in rural areas.
7. (a) Discuss four harmful effects of ectoparasites on farm animals.
- (b) Identify four external parasites of poultry and explain how they can be controlled.

- (c) (i) Explain four economic losses caused by ticks in cattle.
- (ii) Suggest four methods of controlling ticks on farms.

8. (a) Define:

- (i) Metabolism
- (ii) Basal metabolism
- (iii) Vitamins
- (iv) Minerals

(b) Mention four functions of Vitamin A in farm animals.

(c) State four deficiency symptoms of Vitamin A in cattle.

(d) Discuss four functions of fats in livestock nutrition.

9. (a) Briefly describe the role of the following organs in the reproductive system of a bull:

- (i) Testes
- (ii) Epididymis
- (iii) Seminal vesicles
- (iv) Penis

(b) Explain the process of spermatogenesis.

(c) Outline four signs of infertility in bulls.

10. (a) Identify five characteristics of good silage.

(b) Mention five factors influencing the quality of silage.

(c) Explain three methods of hay conservation.

(d) State four advantages of silage over hay.