

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

**134/1 SCIENCE AND PRACTICE OF AGRICULTURE 1**

**(For Both School and Private Candidates)**

**Time: 2:30 Hours**

**Year: 2009**

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**Instructions**

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



## **SECTION A**

### **AGRICULTURAL ENGINEERING AND LAND PLANNING**

1. (a) Explain the advantages of drip irrigation over furrow irrigation.
- (b) (i) Name the components of a drip irrigation system.
- (ii) Describe the function of emitters.
2. (a) A seed drill has 8 planting tubes spaced 25 centimetres apart. Calculate the total width of the drill in metres.
- (b) If the drill travels at 4 kilometres per hour, calculate the area covered in one hour.
3. (a) Name the common plumbing fittings used to join pipes of different diameters.
- (b) (i) Describe the use of a gate valve.
- (ii) Explain how to fix a leaking pipe joint.
4. (a) List four types of errors that occur during surveying.
- (b) (i) Define a systematic error.
- (ii) Give one example of a gross error.
5. (a) Describe the materials used for roofing farm buildings.
- (b) (i) State the advantages of galvanized iron sheets.
- (ii) Discuss the importance of a high roof in tropical animal housing.

## **SECTION B**

### **SOIL SCIENCE**

6. (a) State the causes of soil acidity.

(b) (i) Name three liming materials.

(ii) Explain how lime reduces soil acidity.

7. (a) Distinguish between macronutrients and micronutrients.

(b) (i) Give three examples of micronutrients.

(ii) Describe the deficiency symptoms of iron in plants.

8. (a) Explain the importance of soil moisture conservation.

(b) (i) Describe the practice of mulching.

(ii) Explain how zero tillage helps in conserving soil moisture.

## **SECTION C**

### **RURAL ECONOMY**

9. (a) Define market equilibrium.

(b) (i) Explain what happens when there is a surplus in the market.

(ii) Explain what happens when there is a shortage in the market.

(c) Use a supply and demand schedule to show how equilibrium price is reached.

(d) Discuss the factors that cause the supply curve of maize to shift to the right.

10. (a) Define the law of comparative advantage in international trade.

(b) (i) Explain why countries trade agricultural products.

(ii) Define a tariff.

(c) Country X can produce either 50 units of coffee or 20 units of tea, while Country Y

can produce either 30 units of coffee or 30 units of tea. Calculate the opportunity cost of producing coffee for each country.

(d) Based on your calculations, state which country has a comparative advantage in coffee production.