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: 2004**

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. Cellura phones are **not** allowed in the examination room.

5. Write your **Examination Number** on every page of your answer booklet(s).

AGRICULTURAL ENGINEERING AND LAND PLANNING

1. (a) Describe the construction of a seed drill.

   (b) Explain the function of the following parts:

   (i) Seed metering mechanism

   (ii) Furrow opener

   (iii) Covering device

   (c) State two advantages of row planting over broadcasting.

2. (a) Explain the meaning of contour farming.

   (b) Describe the procedure of laying contour lines using an A-frame.

   (c) State two advantages of contour farming.

3. (a) Distinguish between manual and animal-drawn farm tools.

   (b) Give two examples of each.

   (c) State one limitation of each category.

4. (a) Explain the purpose of farm roads.

   (b) Describe two types of farm roads.

   (c) State two factors considered when planning farm roads.

5. (a) A rectangular field measures 120 m by 80 m.

   (i) Calculate the area in square metres.

   (ii) Convert the area into hectares.

   (b) State two uses of farm maps.

SECTION B

SOIL SCIENCE

6. (a) Define soil pH.

   (b) Explain how soil pH affects nutrient availability.

   (c) State two methods of correcting acidic soils.

7. (a) Explain soil erosion.

   (b) Describe four causes of soil erosion.

   (c) State two effects of soil erosion on crop production.

8. (a) Define soil air.

   (b) Explain four functions of soil air in plant growth.

SECTION C

RURAL ECONOMY

9. (a) Explain the meaning of farm records.

   (b) Describe four types of farm records.

   (c) Explain four advantages of keeping farm records.

   (d) A farmer recorded the following annual sales:

   Maize Tshs 2,400,000

   Beans Tshs 1,800,000

   Sunflower Tshs 1,200,000

   Calculate total farm income.

10. (a) Explain the term marketing margin.

    (b) Describe four components of marketing costs.

    (c) Given the following data:

Farm gate price Tshs 900 per kg

Retail price Tshs 1,600 per kg

Marketing cost Tshs 400 per kg

(i) Calculate the marketing margin.

(ii) Calculate the trader's profit margin.

(d) State two effects of high marketing margins on consumers.