

GAUTENG DEPARTMENT OF EDUCATION  
SENIOR CERTIFICATE EXAMINATION

OCTOBER / NOVEMBER 2005  
OKTOBER / NOVEMBER 2005

APPLIED AGRICULTURAL SCIENCE SG

TIME: 3 hours

MARKS: 300

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**INSTRUCTIONS:**

- This question paper consists of THREE sections, Sections **A**, **B** and **C**.
- Answer ALL the questions.

SECTION A: Animal production  
SECTION B: Harvest production  
SECTION C: Processing of farm produce

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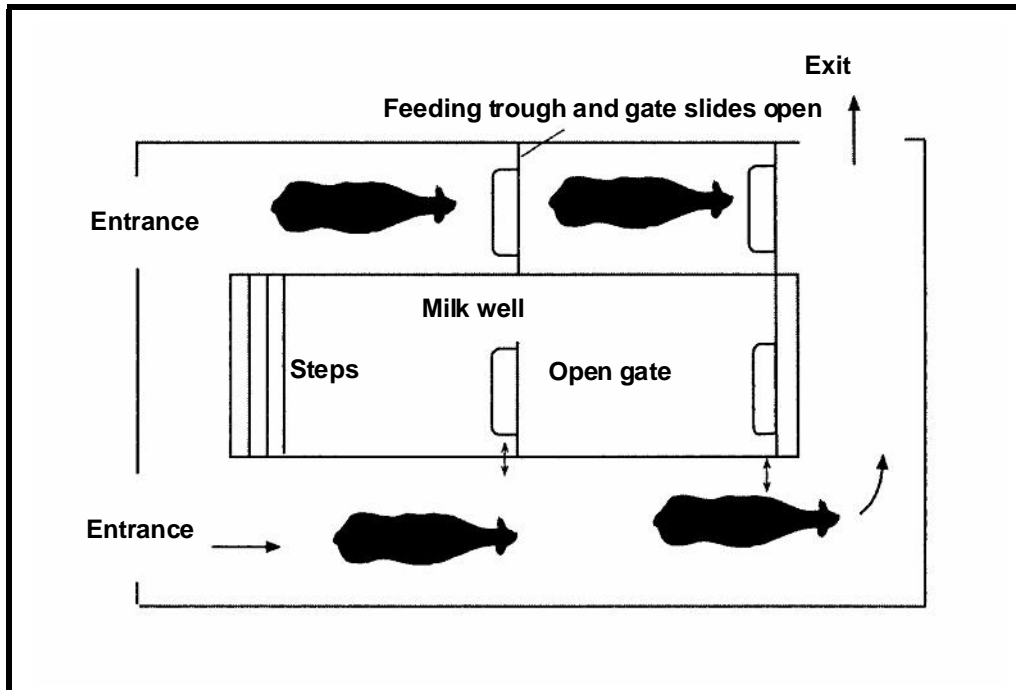
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SECTION A  
**ANIMAL PRODUCTION**

**QUESTION 1**  
**DAIRY FARMING**

- 1.1 Name the factors that have an influence on milk production. (8)
- 1.2 Five specific feeding phases can be identified to obtain optimal production, reproduction and health of cows. List these phases and give the length of each phase. (10)
- 1.3 List the most important problems confronting the dairy industry. (6)

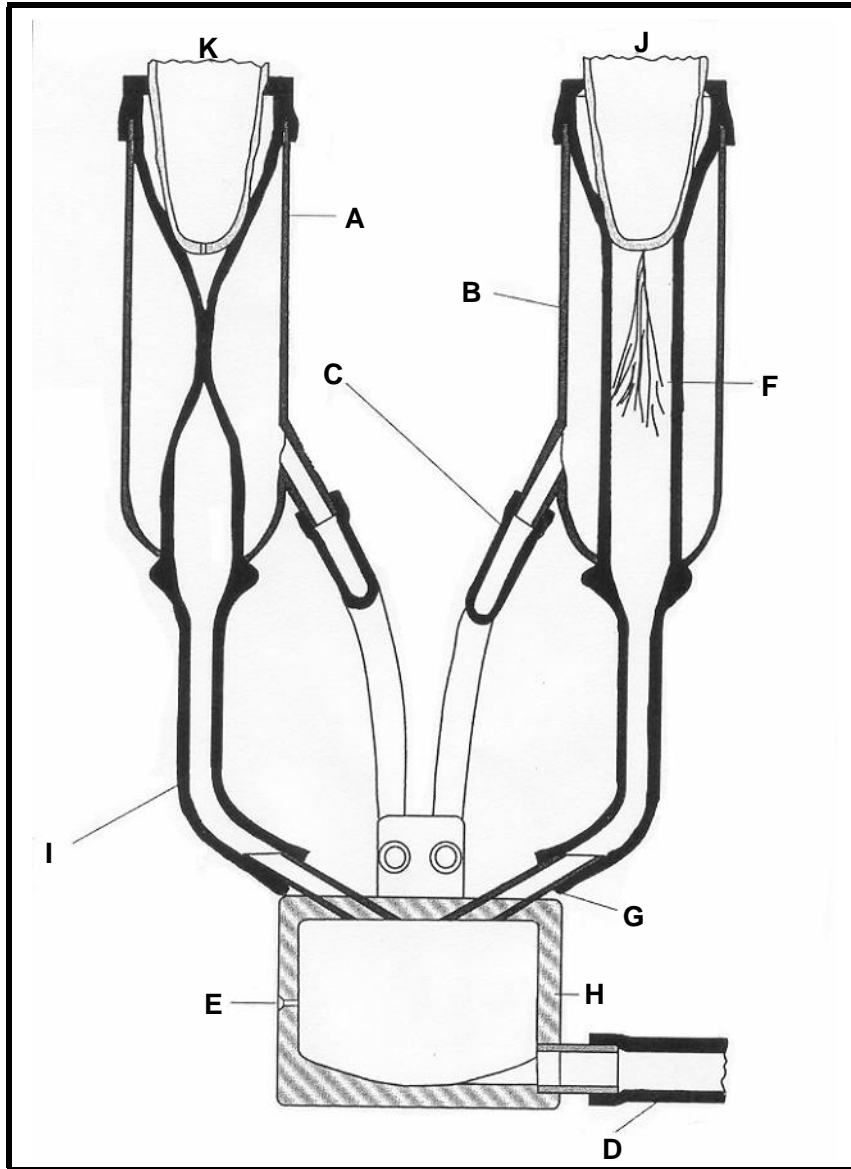
1.4 Study the figure below and answer the questions that follow.



- 1.4.1 What is the system called? (2)
- 1.4.2 Give FIVE disadvantages of this system. (5)
- 1.5 State the advantages of artificial insemination. (7)
- 1.6 State the regulations that must be adhered to when building a milkroom. (10)

1.7 Study the figure and supply the labels for A to J.

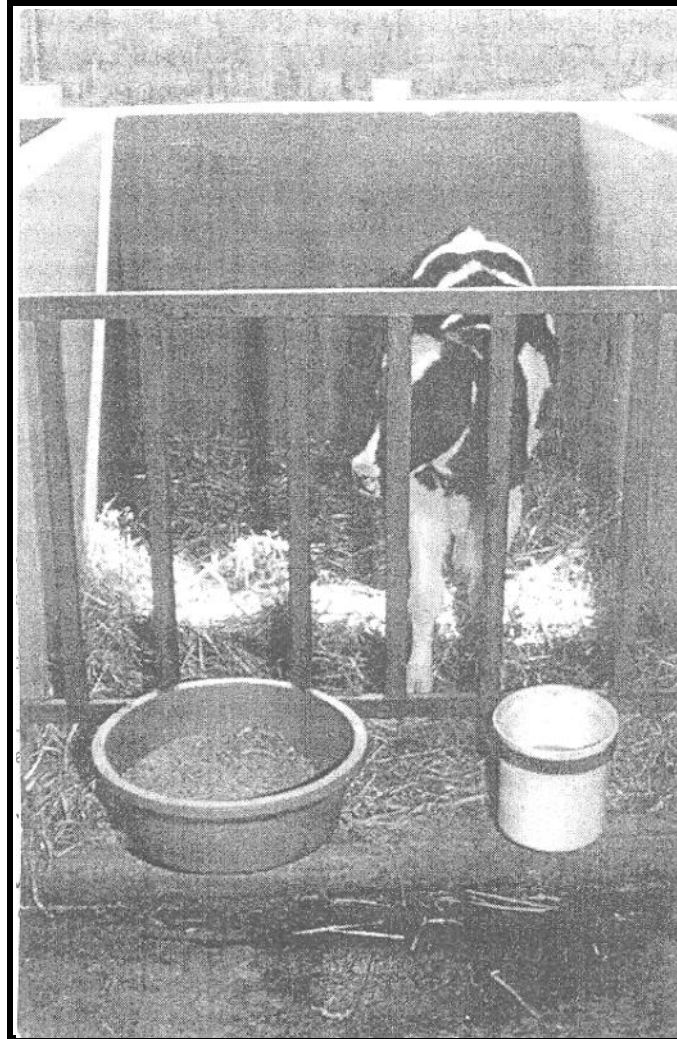
(10)



1.8 State the requirements for the floors of any intensive housing system.

(6)

1.9 Study the picture and answer the questions that follow.



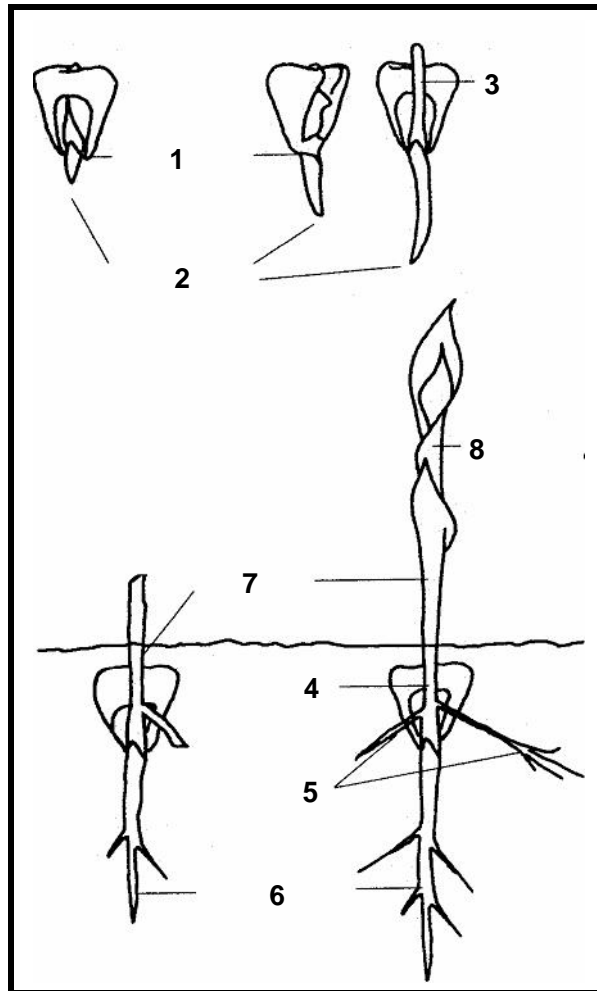
- 1.9.1 What is this method of housing called? (2)
- 1.9.2 Mention TEN benefits of this system. (10)
- 1.10 Discuss the following after-care actions on the calf:
- 1.10.1 Burdizzo castration (6)
- 1.10.2 Removal of extra teats (4)
- 1.11 Answer the following questions on mastitis:
- 1.11.1 What is **mastitis**? (2)
- 1.11.2 Explain the differences between acute and chronic mastitis. (6)
- 1.12 Discuss the causes and prevention of taints and odours in milk. (6)

**TOTAL FOR SECTION A: [100]**

SECTION B  
HARVEST PRODUCTION

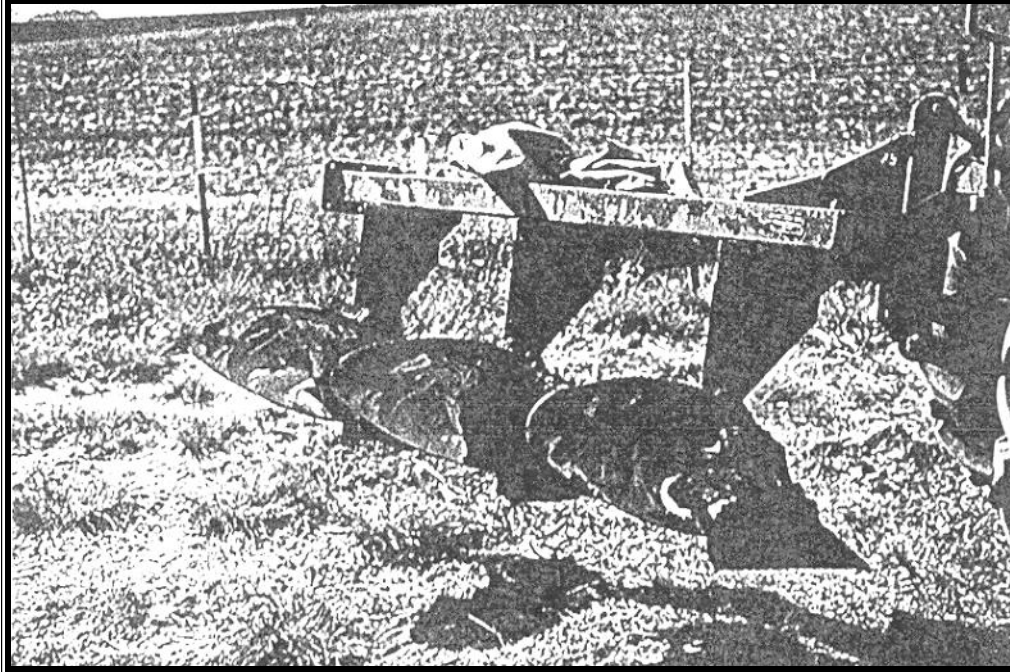
QUESTION 2  
MAIZE PRODUCTION

- 2.1 Label parts 1 to 8 of the emerging maize plant with. (8)



- 2.2 Give the different growth stages in the growth and development of the maize plant. (11)
- 2.3 Discuss the climatic requirements for maize production. (7)
- 2.4 Discuss how tillage will affect the following processes in soil:
- 2.4.1 Infiltration and evaporation (5)
  - 2.4.2 Germination and root growth (4)
  - 2.4.3 Erosion (3)

2.5 Study the picture and answer the questions that follow:



- 2.5.1 Name the implement shown on the picture. (2)
- 2.5.2 Briefly discuss the disadvantages of using this implement. (4)
- 2.5.3 For what type of tillage system is this implement used? (2)
- 2.5.4 Mention FOUR disadvantages of the system mentioned in Question 2.5.3. (4)
- 2.6 Discuss the factors to be kept in mind when choosing a maize cultivar. (10)
- 2.7 Discuss the use of chemical adjuvants in chemical control. (12)
- 2.8 Mention any SIX physical records on a maize farm. (6)
- 2.9 Discuss the mechanical harvesting of maize. (6)
- 2.10 Give the symptoms of cob and tassel smut. (6)
- 2.11 Give a description of the cutworm's larvae and moths. (10)

**TOTAL FOR SECTION B: [100]**

SECTION C  
**PROCESSING OF FARM PRODUCE**

**QUESTION 3**

- |        |  |      |
|--------|--|------|
| 3.1    | Explain the composition of the edible portion of a whole egg.                            | (8)  |
| 3.2    | Discuss the dehydration of eggs.   | (7)  |
| 3.3    | Give the classification of table birds under the heading: <i>Young tender chickens</i> . | (8)  |
| 3.4    | Briefly explain the deboning process in the correct order.                               | (14) |
| 3.5    | Discuss the nutritive value of milk under the following headings:                        |      |
| 3.5.1  | Protein  | (3)  |
| 3.5.2  | Carbohydrates  | (3)  |
| 3.5.3  | Fats   | (3)  |
| 3.6    | Explain the composition of milk.   | (10) |
| 3.7    | Discuss the storing of milk at home.   | (7)  |
| 3.8    | Discuss the effect of heat on milk.  | (8)  |
| 3.9    | What should be kept in mind when storing cream?  | (5)  |
| 3.10   | Discuss the preparation of meat for freezer storage.                                     | (8)  |
| 3.11   | Discuss the preservation of meat under the headings:                                     |      |
| 3.11.1 | Smoking  | (4)  |
| 3.11.2 | Salting  | (4)  |
| 3.12   | Name any EIGHT waste products of meat.   | (8)  |

**TOTAL FOR SECTION C: [100]**

**TOTAL: 300**

**END**