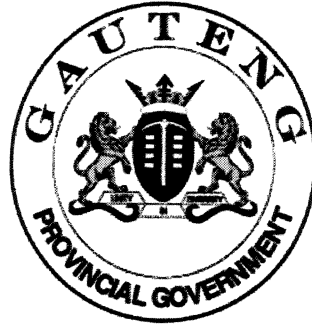


**SENIOR CERTIFICATE  
EXAMINATION  
SENIORSERTIFIKAAT-EKSAMEN**



**OCTOBER / NOVEMBER  
OKTOBER / NOVEMBER**

**2004**

**APPLIED AGRICULTURAL  
SCIENCE**

**TOEGEPASTE  
LANDBOU-  
WETENSKAP**

**SG**

**936-2/0**

APPLIED AGRICULTURAL SCIENCE SG



936 2 0

SG

**6 pages  
6 bladsye**

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GAUTENGSE DEPARTEMENT VAN ONDERWYS  
SENIORSERTIFIKAAT-EKSAMEN

TOEGEPASTE LANDBOUWETENSKAP SG

TYD: 3 uur

PUNTE: 300

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**INSTRUKSIES:**

- Beantwoord AL die vrae.
- Hierdie vraestel bestaan uit DRIE afdelings.

AFDELING A: Diereproduksie  
AFDELING B: Gewasproduksie  
AFDELING C: Verwerking van plaasprodukte

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**AFDELING A**  
**DIEREPRODUKSIE**

**VRAAG 1**  
**MELKBEESSBOERDERY**

- 1.1 Bespreek die ekonomiese belangrikheid van die suiwelbedryf. (8)
- 1.2 Bespreek die punte van belang as 'n stamboom bestudeer word. (8)
- 1.3 Noem die belangrikste voordele van kunsmatige inseminasie. (8)
- 1.4 Bespreek die redes hoekom kalwers so spoedig as moontlik kolostrum moet kry. (8)
- 1.5 Hoe kan die volgende faktore melkproduksie beïnvloed?
- 1.5.1 Stadium van laktasie
- 1.5.2 Ouderdom van koei
- 1.5.3 Grootte van koei
- 1.5.4 Ras
- 1.5.5 Estrus
- 1.5.6 Droë periode (12)
- 1.6 Dui aan hoe jy 'n kalf met die nommer 296 sal oormerk. (6)

GAUTENG DEPARTMENT OF EDUCATION  
SENIOR CERTIFICATE EXAMINATION

APPLIED AGRICULTURAL SCIENCE SG

TIME: 3 hours

MARKS: 300

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**INSTRUCTIONS:**

- Answer ALL the questions.
- This question paper consists of THREE sections.

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

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**SECTION A**  
**ANIMAL PRODUCTION**

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

- 1.1 Discuss the economic importance of the dairy industry. (8)
- 1.2 Discuss the points of importance when studying a family tree. (8)
- 1.3 Give the most important advantages of artificial insemination. (8)
- 1.4 Discuss the reasons why calves should have colostrum as soon as possible. (8)
- 1.5 How can the following factors influence the production of milk?
- 1.5.1 Stage of lactation
- 1.5.2 Age of cow
- 1.5.3 Size of cow
- 1.5.4 Breed
- 1.5.5 Oestrus
- 1.5.6 Dry period (12)
- 1.6 Indicate how you would earmark a calf with the number 296. (6)

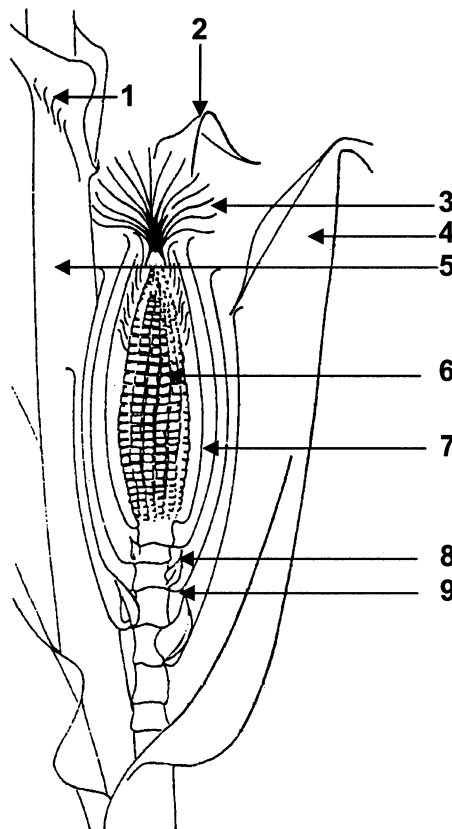
- 1.7 Noem die faktore wat die voerinnname van 'n koei sal beïnvloed. (6)
- 1.8 Beantwoord die volgende vrae oor die voeding en bestuur van die droë koei:
- 1.8.1 Wat is die doel van die droë periode? (4)
- 1.8.2 Wat is die duur van die droë periode? (1)
- 1.8.3 Noem die datum van die droë periode. (1)
- 1.8.4 Noem DRIE metodes om koeie op te droog. (3)
- 1.9 Bespreek die bronne van melkbesoedeling. (10)
- 1.10 Hoe kan melkkoors voorkom word? (11)
- 1.11 Noem SES maniere om melk te preserveer (bewaar). (6)
- 1.12 Gee die klassifikasie van voere. (8)

**TOTAAL VIR AFDELING A: [100]**

**AFDELING B**  
**GEWASPRODUKSIE**

**VRAAG 2**

- 2.1 Bespreek die ekonomiese belangrikheid van mielieproduksie in Suid-Afrika. (6)
- 2.2 Identifiseer byskrifte 1 tot 9 in die onderstaande diagram.



(9)

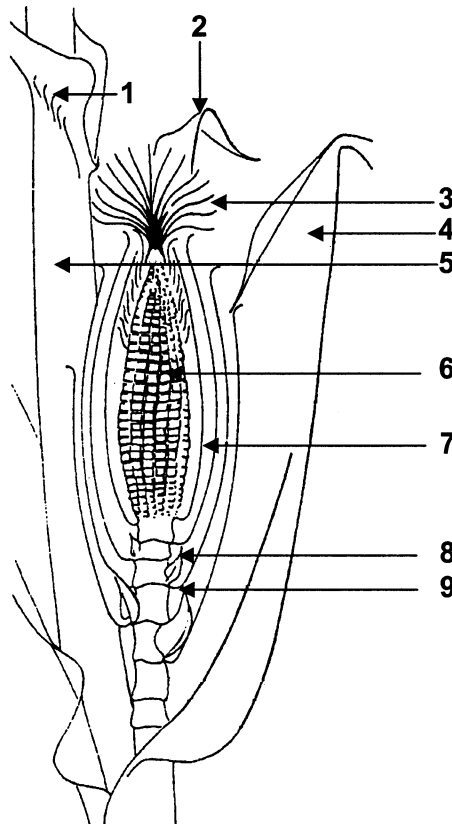
- 1.7 Mention the factors that will influence the feed intake of a cow. (6)
- 1.8 Answer the following questions on the feeding and management of the dry cow:
- 1.8.1 What is the purpose of the dry period? (4)
- 1.8.2 What is the duration of the dry period? (1)
- 1.8.3 Mention the date of drying off. (1)
- 1.8.4 Mention THREE methods of drying off cows. (3)
- 1.9 Discuss the sources of milk pollution. (10)
- 1.10 How can milk fever be prevented? (11)
- 1.11 Mention SIX ways of preserving milk. (6)
- 1.12 Give the classification of feeds. (8)

TOTAL FOR SECTION A: [100]

**SECTION B**  
**HARVEST PRODUCTION**

**QUESTION 2**

- 2.1 Discuss the economic importance of maize production in South Africa. (6)
- 2.2 Identify the parts labelled 1 to 9 in the diagram below.



(9)

- 2.3 Bespreek hoekom die volgende groeiperiodes baie krities is in mielieverbouing:
- 2.3.1 Stadium 1 (4)
  - 2.3.2 Stadium 2 (2)
  - 2.3.3 Stadium 4 (3)
- 2.4 Hoe word die volgende eienskappe van grond deur bewerking beïnvloed?
- 2.4.1 Tekstuur en struktuur (4)
  - 2.4.2 Bulkdigtheid en porositeit (4)
  - 2.4.3 Hidrouliese eienskappe (2)
- 2.5 Watter effek het bewerking op die volgende prosesse in grond?
- 2.5.1 Infiltrasie en evaporasie (4)
  - 2.5.2 Ontkieming en wortelgroei (4)
- 2.6 Watter voordele en nadele het geen bewerking as 'n bewerkingsstelsel? (12)
- 2.7 Noem die belangrikste riglyne by die keuse van 'n mieliekultivar. (4)
- 2.8 Noem die voordele van wisselbou. (8)
- 2.9 Bespreek die faktore wat die doeltreffende werking van blaartoegediende onkruidodders bepaal. (10)
- 2.10 Noem SES finansiële rekords op 'n mielieplaas. (6)
- 2.11 Noem enige VIER makrovoedingstowwe wat aan mielieplante voorsien word. (4)
- 2.12 Definieer 'n **onkruid**. (4)
- 2.13 Bespreek die Amerikaanse Bolwurm as 'n mielieplaag onder die volgende hoofde:
- 2.13.1 Blaarskade (4)
  - 2.13.2 Kopskade (3)
  - 2.13.3 Beskrywing van die larwe (3)

**TOTAAL VIR AFDELING B: [100]**

- 2.3 Discuss why the following growth periods are critical in maize production:
- 2.3.1 Stage 1 (4)
  - 2.3.2 Stage 2 (2)
  - 2.3.3 Stage 4 (3)
- 2.4 How are the following properties of soil affected by tillage?
- 2.4.1 Texture and structure (4)
  - 2.4.2 Bulk density and porosity (4)
  - 2.4.3 Hydraulic properties (2)
- 2.5 What are the effects of tillage on the following processes in soil?
- 2.5.1 Infiltration and evaporation (4)
  - 2.5.2 Germination and root growth (4)
- 2.6 What are the advantages and disadvantages of no tillage as a tillage system? (12)
- 2.7 Mention the important guidelines when considering a maize cultivar. (4)
- 2.8 State the advantages of crop rotation. (8)
- 2.9 Discuss the factors which affect the efficiency of herbicides applied to leaves. (10)
- 2.10 Mention any SIX financial records on a maize farm. (6)
- 2.11 Name any FOUR macronutrients supplied to maize plants. (4)
- 2.12 Define a **weed**. (4)
- 2.13 Discuss the American Bollworm as a pest on the maize plant under the following headings:
- 2.13.1 Leaf damage (4)
  - 2.13.2 Ear damage (3)
  - 2.13.3 Description of larvae (3)

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

**AFDELING C**  
**VERWERKING VAN PLAASPRODUKTE****VRAAG 3**  
**VOEDSELVERWERKING**

- 3.1 Bespreek die seleksie en berging (stoor) van eiers. (10)
- 3.2 Bespreek die dehidrasie van eiers. (6)
- 3.3 Beantwoord die volgende vrae oor die klassifikasie van tafelhoëls:
- 3.3.1 Gee die klasse van kalkoene. (6)
- 3.3.2 Hoe oud sal die volgende hoenders wees? Gee ook hul gewig.
- (a) Slaghoender (Broiler) (2)
- (b) Kapoen (Capon) (2)
- (c) Braaihoender (Roaster) (2)
- 3.4 Verduidelik die ontbeenproses van hoenders. (14)
- 3.5 Verduidelik hoekom melk alleen nie 'n volmaakte voedsel is nie. (6)
- 3.6 Melk kan vir 'n beperkte periode gestoor word as sekere faktore in gedagte gehou word. Bespreek hierdie faktore. (8)
- 3.7 Bespreek die mislukkings in die maak van botter as
- 3.7.1 die room te dun is. (5)
- 3.7.2 die temperatuur nie reg is nie. (5)
- 3.8 Noem die vetkategorieë van vleis. (6)

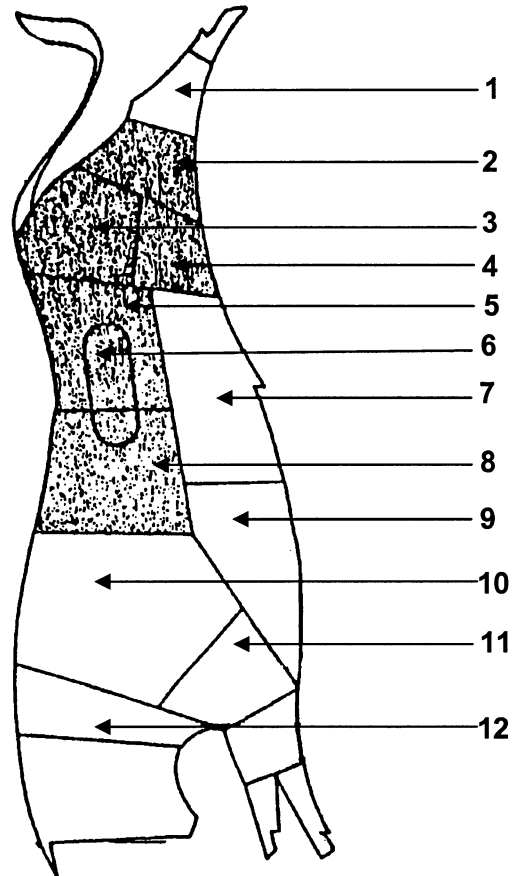


**SECTION C**  
**PROCESSING OF FARM PRODUCE**

**QUESTION 3**  
**FOOD PROCESSING**

- 3.1 Discuss the selection and storage of eggs. (10)
- 3.2 Discuss the dehydration of eggs. (6)
- 3.3 Answer the following questions on the classification of table birds:
- 3.3.1 Name the classes of turkeys. (6)
- 3.3.2 How old will the following chickens be? Also give the weight of each.
- (a) Broiler (2)
- (b) Capon (2)
- (c) Roaster (2)
- 3.4 Explain the deboning process of chickens. (14)
- 3.5 Explain why milk alone is not a perfect food. (6)
- 3.6 Milk can be stored for a limited period if certain factors are kept in mind. Discuss these factors. (8)
- 3.7 Discuss the failures in butter making if
- 3.7.1 the cream is too thin. (5)
- 3.7.2 the temperature is not right. (5)
- 3.8 Name the fatness categories of meat. (6)

3.9 Identifiseer dele 1 tot 12 op die karkas.



(12)

3.10 Watter reëls moet nagekom word om die kwaliteit van vleis vir lang periodes te bewaar?

(7)

3.11 Noem NEGE vleisprodukte.

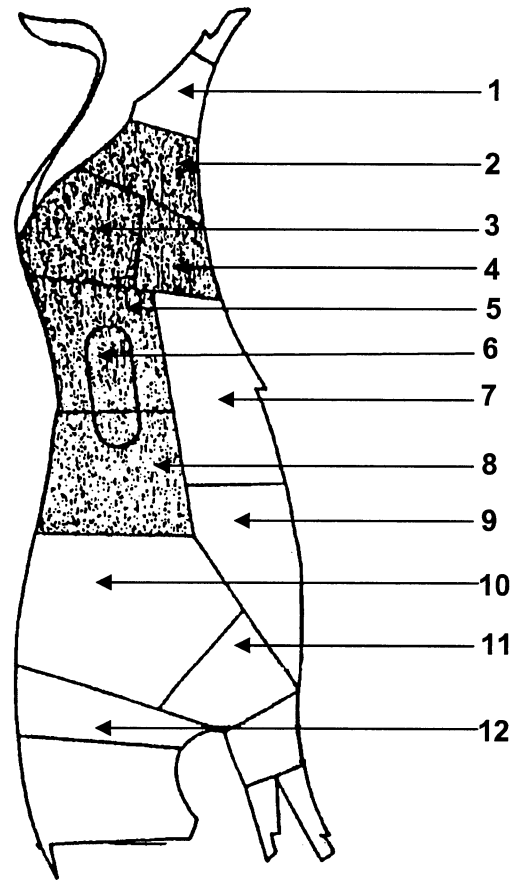
(9)

**TOTAAL VIR AFDELING C: [100]**

**TOTAAL: 300**

**EINDE**

3.9 Identify the parts of the carcass labelled 1 to 12.



(12)

3.10 What rules must be observed in order to keep the quality of meat for long periods?

(7)

3.11 Name NINE meat products.

(9)

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

**TOTAL: 300**

**END**