

**GAUTENGSE DEPARTEMENT VAN ONDERWYS
VOORBEREIDENDE EKSAMEN**

**LANDBOUWETENSKAP
(Eerste Vraestel)**

MOONTLIKE ANTWOORDE

AFDELING A

VRAAG 1

1.1			
1.1.1	D		
1.1.2	C		
1.1.3	A		
1.1.4	B		
1.1.5	D		
1.1.6	A		
1.1.7	B		
1.1.8	D		
1.1.9	C		
1.1.10	A		2x10=(20)
1.2			
1.2.1	Hay		
1.2.2	Duodenum		
1.2.3	Metabolic energy		
1.2.4	Oestrus		
1.2.5	Hermaphrodite		2x5=(10)
1.3			
1.3.1	E - Fishmeal		
1.3.2	G - Sheep blowflies		
1.3.3	A - Oestrus synchronization		
1.3.4	C - Cellulose enzyme		
1.3.5	B - Ventriculus		2x5=(10)
1.4			
1.4.1	A - Avian flu		
	B - Mastitis		
	C - Lumpy wool		
	D - Rabies		
	E - Gall water		
			1x5=(5)
			(45)

TOTAAL AFDELING A: [45]

AFDELING B

VRAAG 2

DIEREVOEDING

2.1

2.1.1 Digestive fluids and their origin

- Bile-liver
- Pancreatic juice-pancreas
- Succus entericus-walls of the small intestines (6)

2.1.2 Effects of the fluid produced by the liver

- Emulsify fats
- Promotes fat absorption
- Assists in the absorption of fat soluble vitamins (2)

2.1.3 Chemical digestion

- The action of enzymes and digestive juices, e.g. hydrochloric acid on food. (2)

Mechanical digestion

- The breaking-down of food through chewing and muscular action. (2)

2.2

2.2.1 The process of rumination

- A. Fine food particles pass into the omasum.
- B. Fluids and finer particles tend to pass into the reticulum continuously.
- C. Feed in the reticulo-rumen is mixed with the micro-organisms and saliva then returned into the mouth for chewing.
- D. Food is kept wet by contractions in the reticulo rumen. (4)

2.2.2 Cellulose digestion

Summary of the role played by micro-organisms on cellulose.

- Cellulose, a complex carbohydrate (polysaccharide) found in the cell wall of plants, cannot be digested by the enzyme amylase;
- Bacteria secrete in the reticulo rumen, a cellulose enzyme;
- To digest cellulose into fatty acids (acetic, propionic and butyric acids) CO₂, methane, proteins and vitamin B-complex which are directly absorbed into the blood vessels. (4)

2.3 Gases that lead to bloating

- Methane (2)

- CO^2

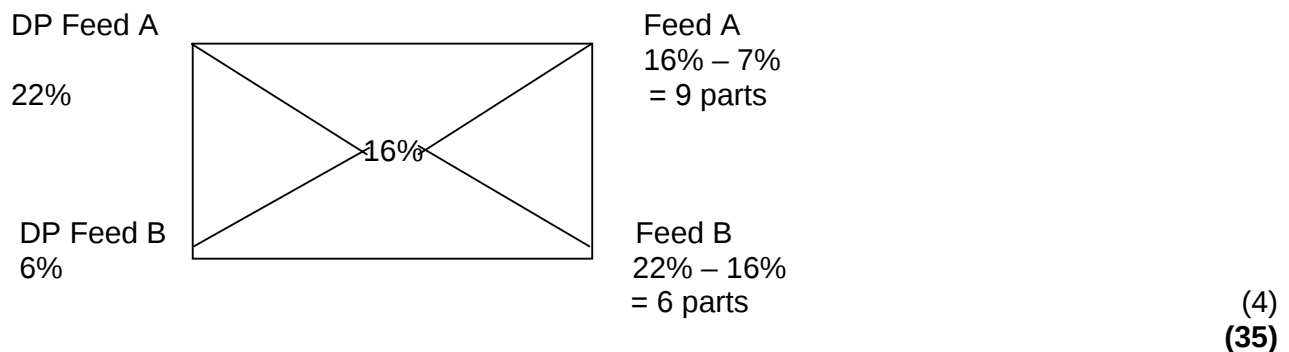
- 2.4 (a) A.
(b) C.
(c) B.
(d) A. (4)

- 2.5 Carbohydrates through maize meal. (1)

2.6 **Recommendations**

- A. Lucerne cut and baled has high protein content and is highly digestible. (2)
B. Chaff is easily digestible when urea (nitrogen) and molasses (carbohydrates) are added. (2)

2.7 **Calculation – Pearson square method**



VRAAG 3

DIERE PRODUKSIE

3.1

3.1.1 **Increasing production**

- Laying a pipeline to obtain better quality water constantly
 - Applying for electricity supply
 - Starting a feedlot
 - Upgrading animals
- (3)

3.1.2 **Construction of shelter**

- Build them shelter or provide shelter for them
 - Provide ideal environmental conditions for animals so that they do not utilize their energy for keeping themselves warm.
 - Protection against wild animals
 - Prevention of stock theft.
- (4)

3.1.3 **Other reasons for providing shelter**

- Prevents unnecessary movement of animals, loss of heat when it is cold.
- Provides shade.
- Reduces the effect of extreme environmental conditions on production of farm animals. (2)

3.1.4 **Starting a feedlot**

- Reduce energy-loss by restricting the movement of animals and feed is directly delivered to them, thereby ensuring rapid growth. (2)

3.2

3.2.1 **Possible means of relieving labour shortage**

- Using trained dogs or horses.
- Using motor cycles.
- Construction of modern facilities. (3)

3.2.2 **Farming operations / activities**

- Castration (1)

3.2.3 **Sheep not as tame**

- May not be used to being frequently handled as a result, do not respond easily, e.g. extensive production
- Conducting several operations in one go might result in them responding in an untamed manner
- Incorrect handling
- It may also be due to handling them in a group situation
- When handled by more than one person
- Might be from a bloodline with wild temperament. (Two only) (2)

3.2.4 **Farming enterprise intensive or extensive**

Extensive

- Animals are not used to being handled
- There are not many labourers
- There are not many control measures (3)

3.3 **Incorrect handling of farm animals**

- Animals can kick, bite, behave unpredictably resulting in injury
- To prevent stampede which might lead to serious injury
- Leads to poor meat quality (rigor mortis)
- Lowered grading due to bruising and decreased production (4)

3.4 **List of manageable fodder flow points**

- The desired production fodder flow must match the required fodder flow
 - Allow livestock business to run smoothly throughout the year
 - Fits well with other activities on the farm
 - Provide a reliable reserve of feed during expected and unexpected seasonal shortages
 - Will not allow impractical silage or haymaking at awkward times
 - Will have all the resources for producing feed
- (6)

3.5

3.5.1 **Cross-Breeding**

The mating of two unrelated individual animals of the same breed from different breeding stock

(2)

3.5.2 **Reasons for the suggested breeds**

- The Dormer is a good meat breed
 - The Zebu cattle are well suited to extreme conditions
 - The Friesland produce large quantities of milk
- (3)
(35)

VRAAG 4

4.1

4.1.1 **Main characteristics of oestrus**

- Pro-oestrus: – Development of the Graafian follicle
 - Oestrus: – Characteristics of oestrus visible
 - Ovulation
 - Met-oestrus: – Fertilization of the ovum
 - Development of corpus luteum.
- (3)

4.1.2 **Hormones responsible for the characteristics**

- A. F.S.H / Follicle stimulating hormone
 - C. Progesterone.
- (2)

4.2 **Three important aspects of artificial insemination**

- Observation of oestrus signs
 - Correct time for insemination
 - The technique itself
- (3)

4.3

4.3.1 **Effects of colostrum**

- Within the 1st eight weeks protection available from colostrum
 - Protection highest directly after birth, decreased gradually over time
- (2)

4.3.2 Reasons for few antibodies

- Due to the inability of the animal to form antibodies
- Availability of protection through colostrum. (2)

4.3.3 Meaning of terms

A. **Colostrum:** The 1st milk rich in nutrients and antibodies produced by a female after giving birth for protection and nourishment of the young animal. (2)

B. **Antibodies:** Chemical substances used inside the animal's body to protect it against disease-forming organisms. (2)

4.3.4 Graphic interpretation

- The level of the antibodies decreased to a very low level at three weeks
- Then increased sharply from week 4
- At week 7 reached very high levels. (2)

4.4

4.4.1 Life cycle of a liver fluke

- Animal
- Liver fluke eggs released in faeces
- Eggs hatch and swim in water
- Worm penetrates water snail (4)

4.4.2 Indigenous treatment for the liver fluke

- Boiling chopped pieces of the bark from umga tree in water
- Administering 200 ml daily (2)

4.4.3 Effects of toxins

- Losses of production
- Death (2)

4.4.4 An organism that causes East Coast Fever

Midges (1)

4.5

4.5.1 **Equipment / medication used**

- (i) B
- (ii) C
- (iii) A
- (iv) A / E. (4)

4.5.2 **The role of the State with regards to****A. Vaccines**

Established a veterinarian station at Onderstepoort that specialises in researching and making vaccines. (2)

B. Control over livestock remedies

Livestock remedies controlled through legislation. Minister has the power to

- withdraw medication.
 - ensure that medication is reliable and controlled. (2)
- (35)**

TOTAAL AFDELING B: [105]

TOTAAL: 150