higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE (VOCATIONAL)

ANIMAL PRODUCTION
NQF LEVEL 4

10 November 2022

This marking guideline consists of 9 pages.

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SECTION A

QUESTION 1

1.1	1.1.1	C✓		
	1.1.2	B✓		
	1.1.3	B✓		
	1.1.4	C✓		
	1.1.5	D✓		
	1.1.6	A✓		
	1.1.7	B✓		
	1.1.8	B✓		
	1.1.9	C✓		
	1.1.10	B✓		
			(10 × 1)	(10)

1.2	1.2.1	C✓		
	1.2.2	E✓		
	1.2.3	F✓		
	1.2.4	J✓		
	1.2.5	G✓		
	1.2.6	M✓		
	1.2.7	B✓		
	1.2.8	A✓		
	1.2.9	D✓		
	1.2.10	K✓		
			(10 × 1)	(10)

[20]

QUESTION 2

2.1 2.1.1 Rumen (1)

2.1.2
- Sufficient micronutrients for the growth and reproduction of the microbes✓
- Fatty acids produced by the microbes✓
- Sufficient easily digestible carbohydrates such as starch and sugars✓
- Sufficient nitrogen in the form of ammonium compounds✓
- The correct pH✓ (5)

2.1.3
- The fibrous parts such as cellulose and lignin are digested into soluble products such as sugars. ✓
- Amino acids from non-protein nitrogen compounds are synthesised. ✓
- Proteins are hydrolysed into amino acids and simple nitrogen compounds such as ammonia. ✓
- Synthesis of vitamin B and K ✓ (4)

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2.2 2.2.1

- **Gross margin** refers to the amount of money that a company retains after incurring the direct costs associated with producing the goods it sells✓ and the services it provides. ✓

OR

It is the net sales less✓the cost of goods sold. ✓

- **Gross profit** is the difference between income✓ and expenditure. ✓

(2 × 2) (4)

2.2 2.2.2

- **Total liabilities** comprise Long and Medium Term Liabilities, ✓Current Liabilities and Net Worth. ✓

- **Current liabilities** are claims on the business which may have to be met within a short period of time, ✓ usually not longer than a year. ✓

(2 x 2) (4)

2.2.3

- **Fixed costs** refer to costs that are common to various enterprises✓ and cannot be easily allocated to different enterprises on the farm. ✓

OR

These are costs that do not change with the size of the enterprise. ✓✓

- **Variable costs** are costs that are specific to an enterprise. ✓✓

OR

These are costs that change with the size of the enterprise. ✓✓

(2 × 2) (4)

2.3 2.3.1

- It is a source of protein. ✓
- It is used as a supplement in the diet of animals. ✓
- It assists digestion during the dry season. ✓
- It assists animals to gain weight through improved rumen function. ✓ (Any 3 × 1) (3)

2.3.2

- Increase the amount of urea feed slowly over at least three weeks. ✓
- Rations and licks containing urea should be fed under cover to protect it from rain. ✓
- Supplemental urea should not exceed 1% of the total ration. ✓ (3)

2.3.3

- The animals are uneasy. ✓
- The animals struggle and bellow because of painful muscle cramps and it could be followed by death. ✓
- The animals have excessive salivation. ✓ (Any 2 × 1) (2)

[30]

TOTAL SECTION A: 50

SECTION B

QUESTION 3

3.1 3.1.1

- Hump on shoulders for good water reserves ✓
- Very hardy animal ✓
- Very efficient feed conversion✓
- Tolerant to diseases and parasites✓
- Strong walker✓
- Strong hooves✓
- Good strong eyes with protruding eyebrow ridges that protect them against dust and bright sunlight✓
- Small sized calves ensure easy calving/birth✓
- Calves grow fast due to good maternal ability✓
- Good quality colostrum helps calves to grow quickly✓
- Tender high quality meat✓
- Strong pigmentation of red to white spotted✓
- Medium frame of about 500 kg per cow✓ (Any 5 × 1) (5)

3.1.2

- Highly fertile✓
- Good mothering ability✓
- High weaning mass of calves✓
- Produces high quality meat✓
- Calm temperament and easy handling✓
- Calving ease✓
- Well adapted to sub-tropical climate✓
- Suitable for use in cross-breeding✓ (Any 6 × 1) (6)

3.2 3.2.1 Culling is the removal of unproductive animals from the herd. ✓ (1)

3.2.2

- Local market demand✓
- The breed should be well-adapted to local conditions✓
- General health and vitality✓
- Fertility✓
- The type of production expected in the future✓
- Uniformity of breeding stock✓
- Outstanding performance of parents and closely related animals✓
- Evaluation of environmental and genetic influences on animals✓ (Any 7 × 1) (7)

3.3 3.3.1

- Climate (rainfall and temperature) ✓
- Soil type ✓
- Topography✓ and
- Management ✓ (4)

3.3.2

- Poor management causes or leads to veld degradation – usually caused by overgrazing. ✓
- Can cause soil erosion✓ (2 × 1) (2)

[25]

QUESTION 4

4.1 4.1.1
2 – Ovaries✓
3 – Fallopian tube/Oviduct✓
6 – Uterus✓ (3)

4.1.2
- Fertilisation takes place✓
- Passage of sperm towards the egg✓
- Passage of the fertilised egg into the uterus for implantation✓

(Any 2 × 1) (2)

4.1.3
- Produces hormone✓
- Produces ovules/unfertilised eggs✓
- Protects the eggs that a female is born with✓ (3)

4.1.4
- Development of the embryo✓
- For gestation✓
- Implantation✓
- Menstruation in females ✓

(Any 2 × 1) (2)

4.2 4.2.1
- Weight loss✓
- Dull coat/rough coat✓
- Diarrhoea✓
- Calves have potbellies✓
- Emaciation/thinness✓
- Bottle jaw✓
- Weakness✓

(Any 6 × 1) (6)

4.2.2
- Warm conditions✓
- Moist conditions✓ (2)

4.3 4.3.1
- Rotational grazing✓
- Dosing✓
- Keep animals away from dams and rivers✓
- Prevent damp bedding ✓

(Any 3 × 1) (3)

4.3.2
- Dipping✓
- Spray race✓
- Pour-on chemicals✓
- Rotational grazing✓ (4)

[25]

TOTAL SECTION B: 50

Answer SECTION C or SECTION D.

SECTION C

QUESTION 5

5.1 5.1.1 The drainage of water is made possible on a gentle sloping floor. (1)

5.1.2
- Teat surfaces must be kept thoroughly and constantly clean before each milking. ✓
- Keep teat surfaces clean between milking. ✓
- Milking equipment must constantly be cleaned and sanitised and operated correctly. ✓
- Milk should always be kept at 4 degrees Celsius. ✓ (4)

5.1.3
- Good drainage✓
- Appropriate chemicals✓
- Safety of cleaners✓ (3)

5.1.4
- It will prevent spoilage ✓
- It will prevent bacterial growth ✓ (2)

5.2
- Bovine ulcerative mammillitis caused by a virus such as bovine herpes virus II✓
- Pseudocowpox of teat skin due to poxvirus✓
- Bovine warts due to viruses such as papillomavirus, BPV1, BPV5 and BPV6✓
- Dermatitis (inflammation of the skin) ✓
- Frostbite in cold areas✓
- Udder sores (necrotic dermatitis) (Any 5 × 1) (5)

5.3 5.3.1 **Animal history sheet** : maintains animal number, breed, date of birth, sire and dam number, ✓ lactation yield records, date of drying, date of disposal/death, cause of disposal. ✓ (3)

5.3.2 **Calving register** : maintains dam and sire number of the calf, calf number, sex and its date of birth✓ and any other remarks like type of calving (normal/abnormal). ✓ (3)

5.4 **Clinical mastitis causes**
- visibly inflammation and abnormal milk such as colour and clots. ✓
- An increase in inflammation can make changes in the udder such as swelling, heat, pain and redness. ✓

Subclinical mastitis
- is the presence of an infection without obvious signs of inflammation or illness. ✓
- Shows no symptoms and can become chronic✓ (4)

[25]

QUESTION 6

6.1 6.1.1
- Storage of milk✓
- Cooling the milk✓
- Mixing the milk✓ (Any 2 × 1) (2)

6.1.2
- Outlet with valve✓
- Thermometer✓
- An automatic cleaning system✓
- Control box✓
- Agitator✓ (5)

6.1.3 It receives limited sunshine. ✓ (1)

6.2 6.2.1
- Food source✓
- Weeds✓
- Disinfectants✓
- Water✓
- New polymer flowers✓
- Phenols in fungicides✓ (6)

6.2.2
- Look out for raw milk taints such as feed stuffs and pasture weeds. ✓
- The correct concentration of cleaning and disinfecting chemicals should be used. ✓
- Phenol-based chemicals should not be used near the dairy unit. ✓
- The water source should receive the correct treatment. ✓
- Pay attention to factors such as factory building material, cleaning material and packaging. ✓ (5)

6.3 6.3.1
- It is caused by bacterial organisms✓
- or fungal organisms. ✓ (2)

6.3.2
- Contaminated teat dip✓
- Dirty water used for udder preparation during milking✓
- Water pods or mud holes✓
- Teat trauma✓
- Flies✓ (Any 4 × 1) (4)

[25]

TOTAL SECTION C: 50

OR

SECTION D

QUESTION 7

7.1 7.1.1

- New Castle✓
- Heartwater fever✓
- Avian influenza✓ (3)

7.1.2

- Air✓
- Contact✓
- Microorganisms✓ (3)

7.1.3

- Vaccination✓
- Quarantine✓
- Biosecurity✓
- Controlling vectors✓
- Good feeding✓ (Any 4 × 1) (4)

7.1.4

- Good ventilation✓
- Provide adequate warmth✓
- Avoid overcrowding✓
- Keep birds according to their ages✓
- Avoid damp conditions✓ (5)

7.2 7.2.1

- Age✓
- Egg production✓
- Breeding✓
- Illness✓
- Good health✓ (5)

- Females with high egg production, but low chick production ✓
- Females with high egg production, but low chick production one breeding season✓
- Females that consistently lay small, dull or malformed eggs✓
- Males that are unable or struggle to mate✓
- Old males, particularly where a high percentage of infertile eggs occur✓
- Birds with injuries✓ (5 x 1) (5)

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QUESTION 8

8.1 8.1.1

- Growth rate✓
- Production potential✓
- Amount of meat produced✓
- Confirmation✓
- Docility✓ (5)

8.1.2

- Less fat and cholesterol✓
- Good starch or iron✓
- Rich in zinc✓
- Low calorie content per portion compared to other animal protein✓
- Rich in vitamin B6 and B12✓
- It has a good taste and is therefore easy to prepare. ✓

(Any 5 × 1) (5)

8.1.3

- When moving them from one place to another✓
- When fetching escaped ostriches✓
- During identification, sexing and medication✓
- During maintenance of the ostrich enclosures✓
- For physical examination✓ (5)

8.2 **Live Weight** is the total weight✓ of any live ostrich at any stage of development✓ whereas **Carcass Weight** :is the weight of a bird at slaughter✓ after skinning and evisceration. ✓ (2 x 2) (4)

8.3

- Shortage of grazing pastures✓
- Overgrazing✓
- Soil erosion✓
- Destruction of natural resources/vegetation✓
- Death of animals due to shortage of food✓
- Poor production✓
- Poor health of animals

(Any 5 × 1) (5)

8.4

- Ticks✓
- Feather lice✓
- Tapeworm✓
- Wireworm✓

(Any 1 × 1) (1)

[25]

TOTAL SECTION D: 50
GRAND TOTAL: 150

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