higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE (VOCATIONAL)

ANIMAL PRODUCTION
NQF LEVEL 3

2 December 2024

This marking guideline consists of 7 pages.

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SECTION A

QUESTION 1

1.1
1.1.1 C
1.1.2 B
1.1.3 C
1.1.4 A
1.1.5 C
1.1.6 D
1.1.7 A
1.1.8 C
1.1.9 C
1.1.10 A

(10 × 1) (10)

1.2 1.2.1 Sensory system is responsible for processing sensory information.✓ It includes the eyes, ears and sensors in the skin for heat, pain and pressure,✓
Nervous system includes major parts of the brain,✓ spinal cord, sensory and motor nerves.✓

1.2.2 The epidermis is the top✓ and thinnest layer of the skin,✓ whereas the dermis is the thickest✓ and middle layer found between the epidermis and the hypodermis of the skin.✓

1.2.3 The urinary system consists of the kidneys, ureter, bladder and urethra,✓ which is responsible for production and storage of urine,✓ whereas the genital system consist of the penis, clitoris, vagina,✓ testes, ovaries and uterus.✓

1.2.4 The endocrine system consists of the glands and organs that make hormones✓ and release them directly into the blood so that they can travel to tissues and organs all over the body✓ whereas the homeostatic control mechanism whereas the homeostatic control mechanism regulates body substances so that internal conditions remain stable✓ and relatively constant such as body temperature and pH.✓

1.2.5 External parasites live on the outside of the body✓ and often annoy their host by biting or irritating the skin,✓ whereas internal parasites live in the blood or tissues✓ inside an animal's body.✓

(5 × 4) (20)
[30]

QUESTION 2

2.1 Each neuron is a specialised cell and has the same basic structure as any other cells.✓ It contains a nucleus, mitochondria and cell membrane.✓ The nucleus of a neuron is contained in the cell body✓. The cell bodies of all neurons are found in the Central Nervous System.✓ The cell body of each neuron has long structures called nerve fibres that lead away from the cell body.✓

The dendron are nerve fibres that conduct signals towards the cell body.✓ The nerves fibre that carries signals away from the cell body is called the axon.✓ Both the axon and dendron branch into finger-like projections called dendrites at their ends.✓

The nerve fibres are covered in a fatty layer called a myelin sheath.✓ The myelin sheath is in turn covered by a thin membrane called the neurilemma.✓ (10)

2.2 Each kidney contains small structures called nephrons.✓ They perform both the functions of excretion✓ and osmo-regulation.✓ Nephrons are loosely embedded in the connective tissue of the kidney and are well supplied with blood.✓

The nephrons produce urine✓ and each nephron consist of a spherical structure called the Malpighian body, which allows the filtration of blood so that waste can be separated from the blood✓ and a long tube called the renal tubule. (6)

2.3 Bowman's capsule is a cup-shaped capsule✓ which looks like a ball that has been opened on one side,✓ whereas the glomerulus is a network of small blood vessels or capillaries✓ located in the cup-shaped Bowman's capsule.✓ (4)
[20]

TOTAL SECTION A: 50

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SECTION B

QUESTION 3

3.1
- Provides the breeder with the opportunity of combining the desirable traits of two or more breeds✓
- The offspring have the characteristics from both parents which can improve hardiness✓ and good mutton quality.✓
- High survival rate of lambs compared to pure breeds✓
- Heterosis/Hybrid vigour✓
- Animals can have a better maternal instinct✓
- Grows faster✓
- High resistance to diseases✓

(8)

3.2
- Covering with hair.
- Large-framed body.
- High fertility and can be mated at any time of the year.
- Very hardy and can produce good quality fat-lamb at any time.
- Good maternal nature.
- High fertility
- High growth rate (Any 5 × 1) (5)

3.3
- Saves feed and/ or grazing
- Promotes better utilisation of feedstuffs by young growing animals
- Is suitable for application during poor seasons
- Provides a longer recovery period for the ewe
- Prevents overgrazing where grazing is limited. (Any 1 × 1) (1)

3.4
- Supplementary feeding is important during the year when the natural grazing does not meet the basic maintenance requirements of the sheep.✓
- For example, during winter months✓ or drought✓ farmers must give the sheep supplementary feed to meet their maintenance requirements.

- Supplementary feeding may be in a form of bulk feeds,✓ concentrated feeds✓and licks.✓
- Fodder crops such as Lucerne and grass hay can be stored to be fed to sheep as bulk supplementary feeds during winter months and droughts.✓

- Licks are a good way of supplementing certain nutrients that are deficient in the sheep's diet.✓
- nutrient deficiencies are protein, phosphorus, potassium and sodium.✓
- Licks are a concentrated block of these various nutrients.✓
- Animals likes them because of their craving for the deficient nutrient.✓ (11)

[25]

QUESTION 4

4.1 Avoiding moist areas:✓ The larva of most roundworms can only survive in moist areas,✓ therefore the most important control measure against internal parasites is to keep animals far away from dams and bodies of water.✓ This can be done by keeping them in camps that are located away from bodies of water.✓ Animals must be provided with fresh bedding to ensure that animals sleep in dry areas.✓

Practising rotational grazing:✓ The worm eggs which are excreted by the animal hatch in the veld.✓ The larvae climb up grass stalks and shrubs where it remains for a while until a next suitable host turns up.✓ The grazing animals swallow the larva with the grass and so become infected.✓ If rotational grazing is practised, the larva dies before the host animals are allowed to come and graze in the area again.✓

Medical Treatment:✓ very effective medical treatment can be applied.✓ Treatment is effective against most internal parasites.✓ A medical control programme must be combined with good management practices, including the prevention and elimination of moist places in the veld.✓ (14)

4.2
- Veld types with the same potential and palatability of grazing should be fenced together if practical.
- Small portions of less palatable veld should be fenced in with larger portions of more palatable veld.
- Certain portions such as watercourses and areas which tend to erode more readily, must be fenced off separately.
- Where ecologically vulnerable veld is fenced in with non- vulnerable veld, grazing should be as if the whole camp consists of vulnerable veld.
- The best veld with the highest percentage of highly palatable perennial grasses should be reserved for growing and lactating sheep.
- The camps must not be too large and should not be smaller than 150 hectares each.
- the different types of veld must be separated by camps.
- To eliminate nutritional deficiencies, camps grouped together should be representative of the variety of veld types on the farm. (8)

4.3
- Stocking rate
- Period of 'stay-in-camp'
- Stock intensity
- Period of absence
- Herd size, composition and handling
- Supplementary feeding
- Stock intensity (Any 3 × 1) (3)

[25]

SECTION C

QUESTION 5

5.1
- Great length
- Fine head, neck and shoulders
- Well-flashed full ham
- Evenly distributed fat,
- Good mothering ability
- Economical food converters (6)

5.2
- It can survive and produce under extensive conditions.
- It can be fed on kitchen waste and other through-away foodstuffs.
- It is very disease resistant.
- It is relatively resistant to external parasite.
- Requires little space to survive
- Excellent maternal traits (4)

5.3
- The number of piglets must determine the quantity of feed that should be given.
- The quantity of feed must allow for the efficient rearing of the litter, and for successful conception at the next mating.
- The number of piglets that the sow suckles will determine the amount of milk she produces.
- The sow should be in good condition at the end of lactation.
- The sow should be fed 2 kg of a balanced ration per day, and between 0.5 and 0.7 kg per piglet above four piglets per litter
- A lactating diet of 14% to 14.5% protein provides adequate protein during the lactation stage.
- Good ration formulation is required to stimulate milk production of large sows with high maintenance requirements.
- The change in live mass, which the sow undergoes, is the best criterion for determining the feed levels.
- The sow with an average litter should not receive less than 600 g of protein per day.
- A constant supply of clean, fresh water is essential. (Any 10 × 1) (10)

5.4
- Pork
- Bacon
- Sausage
- Manure/fertiliser
- Variety of medicine such as insulin
- Lard, leather and glue (Any 3 × 1) (3)

5.5 Extensive farming means agricultural production that uses small input of labour, fertilizer✓ and capital.✓ OR Is managing agricultural production without the use of a lot of capital or labour. (Any 2 × 1) (2)

[25]

QUESTION 6

6.1 Heritability refers to genetic characteristics✓ that can passed on from one generation to another.✓ (2)

6.2
- Growth rate
- Efficiency of feed conversion
- Carcass quality
- Muscle quality
- Conformation
- Mothering ability
- Fertility (Any 7 × 1) (7)

6.3
- The boar pen should be built in a way that it is cool in summer.✓
- The floor must not be too slippery to avoid injury.✓
- It should be within easy reach when sows are served.✓
- The boars should be kept within sight,✓ sound✓ and smell✓ of the sows to bring the females into season quickly.✓
- The boar pen should have an area of about seven to eight square metres✓ for the boar to exercise.✓ (9)

6.4
- Promotes homozygosity and consequently reduces heterozygosity
- Helps in the elimination of harmful recessive genes
- Maintains a close relationship between successive generations and a superior ancestor
- Improves desirable traits such as meat quality
- Helps in the development/maintenance of pure line pig breeds

(Any 4 × 1) (4)

6.5
- Colibacillosis
- Swine erysipelas (diamond skin disease)
- Greasy pig disease
- Leptospirosis
- Parvovirus
- Anaemia (Any 3 × 1) (3)

[25]

TOTAL SECTION C: 50
GRAND TOTAL: 150

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