



Province of the
EASTERN CAPE
EDUCATION

**NATIONAL
SENIOR CERTIFICATE**

GRADE 10

NOVEMBER 2018

**AGRICULTURAL SCIENCES P1
MARKING GUIDELINE**

MARKS: 150

This marking guideline consists of 9 pages.

SECTION A**QUESTION 1**

- | | | | | |
|-----|--------|---------------------------------|----------|------|
| 1.1 | 1.1.1 | B ✓✓ | | |
| | 1.1.2 | B ✓✓ | | |
| | 1.1.3 | A ✓✓ | | |
| | 1.1.4 | D ✓✓ | | |
| | 1.1.5 | A ✓✓ | | |
| | 1.1.6 | C ✓✓ | | |
| | 1.1.7 | A ✓✓ | | |
| | 1.1.8 | C ✓✓ | | |
| | 1.1.9 | D ✓✓ | | |
| | 1.1.10 | B ✓✓ | (10 x 2) | (20) |
| 1.2 | 1.2.1 | B only ✓✓ | | |
| | 1.2.2 | None ✓✓ | | |
| | 1.2.3 | B only ✓✓ | | |
| | 1.2.4 | None ✓✓ | | |
| | 1.2.5 | Both A and B ✓✓ | (5 x 2) | (10) |
| 1.3 | 1.3.1 | Gross domestic product / GDP ✓✓ | | |
| | 1.3.2 | Regurgitation ✓✓ | | |
| | 1.3.3 | Feed conversion ratio / FCR ✓✓ | | |
| | 1.3.4 | Dual purpose ✓✓ | | |
| | 1.3.5 | Ecological pyramid ✓✓ | (5 x 2) | (10) |
| 1.4 | 1.4.1 | Biodiversity ✓ | | |
| | 1.4.2 | Economy ✓ | | |
| | 1.4.3 | Title hold ✓ | | |
| | 1.4.4 | Resource protection law ✓ | | |
| | 1.4.5 | Grazers ✓ | (5 x 1) | (5) |

TOTAL SECTION A: 45

SECTION B**QUESTION 2: AGRO-ECOLOGY**

- 2.1 2.1.1 **Suitable heading for the diagram**
• Food web ✓ (1)
- 2.1.2 **Letters representing primary consumers and predators**
(a) D/E/B ✓ (1)
(b) A/C ✓ (1)
- 2.1.3 **Changes that will take place in the ecosystem if organism C is removed**
• Organism D/B ✓ will increase ✓ (2)
- 2.1.4 **TWO biotic factors**
• Cow ✓
• Bird ✓
• Mushroom ✓
• Plants/grass ✓
• Rabbit ✓
• Human ✓
• Jackal ✓ (Any 2 x 1) (2)
- 2.2 2.2.1 **Threat to the forest biome**
• Farming (clearing of the forest) ✓
• Spread of invasive alien species ✓ (Any 1 x 1) (1)
- 2.2.2 **TWO other threats that are not mentioned in the scenario**
• Growing human needs in rural areas (trees removed for wood, building, medicine) ✓
• Grazing and burning activities ✓
• Mining along the coast ✓
• Road building, power lines, dams, resorts. ✓ (Any 2 x 1) (2)
- 2.2.3 **TWO reasons for the importance of the forest biome in agriculture**
• Timber production ✓
• Plantation of exotic trees e.g. pine and eucalyptus ✓
• Supports the tropical and sub-tropical fruit industry ✓ (Any 2 x 1) (2)

- 2.2.4 **THREE other biomes of South Africa**
- Grassland ✓
 - Fynbos ✓
 - Savannah ✓
 - Nama-Karoo ✓
 - Succulent Karoo ✓
 - Thicket ✓
- (Any 3 x 1) (3)
- 2.3 2.3.1 **The type of nutrient cycle in the diagram**
- Carbon cycle ✓
- (1)
- 2.3.2 **Main source of carbon**
- Atmosphere ✓
- (1)
- 2.3.3 **Labels for the processes numbered 1 and 6**
- 1 – photosynthesis ✓
 - 6 – Combustion ✓
- (2)
- 2.3.4 **THREE ways in which carbon dioxide is returned to the atmosphere**
- Respiration ✓
 - Combustion ✓
 - Decomposition ✓
 - Fossilisation ✓
- (Any 3 x 1) (3)
- 2.4 2.4.1 **Grazing systems represented by FARM A and FARM B**
- FARM A – Continuous grazing ✓
 - FARM B – Rotational grazing ✓
- (2)
- 2.4.2 **Farm with minimal management input**
- Farm A ✓
- (1)
- 2.4.3 **Farm with low stocking rate**
- Farm B. ✓ Few animals in a camp compared to farm A ✓
- (2)
- 2.4.4 **THREE practices that lead to poor veld condition**
- Overgrazing ✓
 - Veld burning ✓
 - Overstocking ✓
 - Selective grazing ✓
 - Continuous grazing ✓
 - Grazing repeatedly in the same season ✓
 - Poor water management ✓
 - Not allowing sufficient rest time ✓
 - Not removing poisonous plants ✓
- (Any 3 x 1) (3)

2.5 2.5.1 Explanation of the underlined term

- Global warming is the phenomenon of the temperature of the Earth increasing ✓ due to greenhouse effect mainly caused by pollution ✓ (2)

2.5.2 TWO disadvantages of climate change from the scenario

- Rise in sea level ✓
- More extreme weather ✓
- Changes in ecosystem ✓ (Any 2 x 1) (2)

2.5.3 Agricultural adaptation measure

- Water conservation ✓
 - Planting trees ✓
 - Changing tillage operations ✓
 - Changing planting dates ✓
 - Soil conservation ✓
 - Portfolio diversification ✓
 - Improved breeding programmes ✓
 - Sustainable agriculture ✓ (Any 1 x 1) (1)
- [35]**

QUESTION 3: AGRI-INDUSTRY**3.1 3.1.1 Classification of the foods in diagrams A, B and C**

- A – staple food ✓
 - B – fresh food ✓
 - C – processed food ✓
- (3)

3.1.2 Three advantages of the food labelled C

- Value adding ✓
 - Longer shelf life ✓
 - Easy to market ✓
 - Easy distribution ✓
 - Increases seasonal availability ✓
 - Makes the transportation of delicate perishable foods possible ✓
 - Reduces the incidence of food-borne diseases ✓
 - More convenient than unprocessed food ✓
 - Addition of nutrients ✓
- (Any 3 x 1) (3)

- 3.1.3 (a) A ✓
(b) C ✓
(c) B ✓
(d) A ✓

(4 x 1) (4)

3.2 3.2.1 THREE different forms in which cancer bush can be used

- Tea extract ✓
 - Creams ✓
 - Pill form ✓
 - Powder form ✓
- (Any 3 x 1) (3)

3.2.2 Regions where this plant grows naturally

- Nama-Karoo ✓ and succulent Karoo ✓
- (2)

3.2.3 Common vegetable family

- Legumes ✓
- (1)

3.2.4 Two characteristics of indigenous knowledge

- Ecologically sustainable ✓
 - Knowledge system of the past ✓
 - Learnt by experience ✓
 - Stored orally and in cultural practices ✓
- (Any 2 x 1) (2)

- 3.2.5
- Yes ✓ – With acceptable reason such as: Has great medicinal value (✓)
 - No ✓ – With acceptable reason such as: Proof that it really has medicinal value must still be researched ✓
- (2)

3.3 3.3.1 Name of the underlined abbreviation

- Council for Scientific and Industrial Research ✓
- (1)

3.3.2 Aims of the CSIR from the scenario

- Provides science based solutions to the challenging environmental and natural resource issues ✓
- Improves competition in the global market ✓

(2)

3.3.3 Benefits of nationally recognised agricultural organisations

- Provides rural and farm protection plan ✓
- Negotiate prices of products and services ✓
- Acts as mouth piece of farmers both on national and international level ✓
- Give feedback to farmers on national agricultural aspects ✓
- Keeps farmers informed about policy, legislation and agricultural programmes that are of interest to them ✓
- Supply market information in our country as well as on export opportunities ✓
- Assist with court cases affecting farmers ✓

(Any 3 x 1)

(3)

3.4 3.4.1 Two uses of communal land

- Crop production ✓
- Grazing ✓
- Gathering of fire wood ✓
- Gathering of medicinal plants ✓

(Any 2 x 1)

(2)

3.4.2 THREE problems associated with communal land

- Land degradation ✓
- Deforestation ✓
- Over-exploitation ✓
- Overgrazing ✓

(Any 3 x 1)

(3)

3.4.3 Differences between *state land* and *private land*

State land	Private land
Is the land that is owned by the government ✓ and is used for national parks, state run irrigation schemes and forestry. ✓	A person or a business owns the property ✓ and that person or business registers title deed. ✓

(4 x 1)

(4)

[35]

QUESTION 4: ANIMAL STUDIES**4.1 4.1.1 Economic importance of animals**

- For income ✓
- For raw materials like hides and skins ✓
- For clothing ✓
- For export/foreign exchange ✓
- Symbol of wealth ✓

(Any 3 x 1) (3)

4.1.2 TWO examples of the traditional importance of cattle not in the diagram above

- Lobola ✓
- Traditional ceremonies ✓
- Draught ✓

(Any 2 x 1) (2)

4.2 4.2.1 Classification of different sheep breeds

Meat breed	Pelt breed	Wool breed
Dorper ✓	Karakul ✓	Merino ✓

(3)

4.2.2 Differences between mohair and wool fibres

Mohair fibres	Wool fibres
<ul style="list-style-type: none"> • Smooth and glossy ✓ • Elastic fibre ✓ • Does not crinkle ✓ • Fibres are curly ✓ • Hollow centre fibres ✓ • Difficult to spin ✓ 	<ul style="list-style-type: none"> • Soft and whitish in colour ✓ • Crinkles more easily ✓ • Fibres are wavy ✓ • Fibres are more solid in the centre ✓ • Easy to spin ✓

(6)

4.3 Correct terminology of the animal species

- 4.3.1 Ox ✓
- 4.3.2 Heifer ✓
- 4.3.3 Ewe ✓
- 4.3.4 Capon ✓
- 4.3.5 Piglet ✓
- 4.3.6 Ram/buck ✓

(6)

4.4 4.4.1 TWO parents of a mule

- Donkey ✓
- Horse ✓

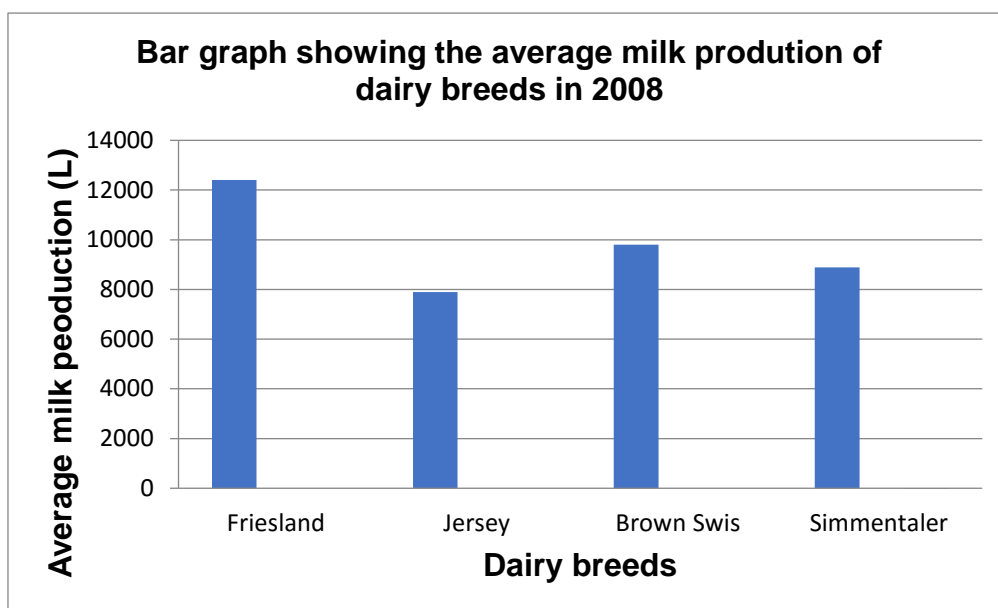
(2)

4.4.2 Characteristics of mules

- Higher and better adaptability than horses ✓
- They are bigger and stronger than donkeys ✓
- Can survive harsh environments ✓
- Perform better under difficult conditions ✓
- Higher disease resistances ✓
- Sterile ✓

(Any 3 x 1) (4)

4.5 4.5.1 Bar graph



Marking graph with the following checklist

Criteria	Yes: 1 mark	No: 0 mark
1 Bar graph	1	0
2 y-axis labelled (average milk production)	1	0
3 x-axis labelled (dairy breeds)	1	0
4 Points correctly plotted	1	0
5 Correct heading	1	0
6 Units	1	0

(6)

4.5.2 The breed that produced the second highest volume of milk

- Brown Swiss ✓

(1)

4.5.3 The breed with the highest production of milk but the lowest percentage of butter fat

- Friesland ✓

(1)

4.5.4 Recommended breed to produce cream for a butter factory

- Jersey. ✓ it has the highest percentage of butter fat ✓

(2)

[35]

TOTAL SECTION B: 105
GRAND TOTAL: 150