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Province of the  
**EASTERN CAPE**  
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**NATIONAL  
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**GRADE 10**

**NOVEMBER 2018**

**AGRICULTURAL SCIENCES P1  
MARKING GUIDELINE**

**MARKS: 150**

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This marking guideline consists of 9 pages.

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

(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 ✓

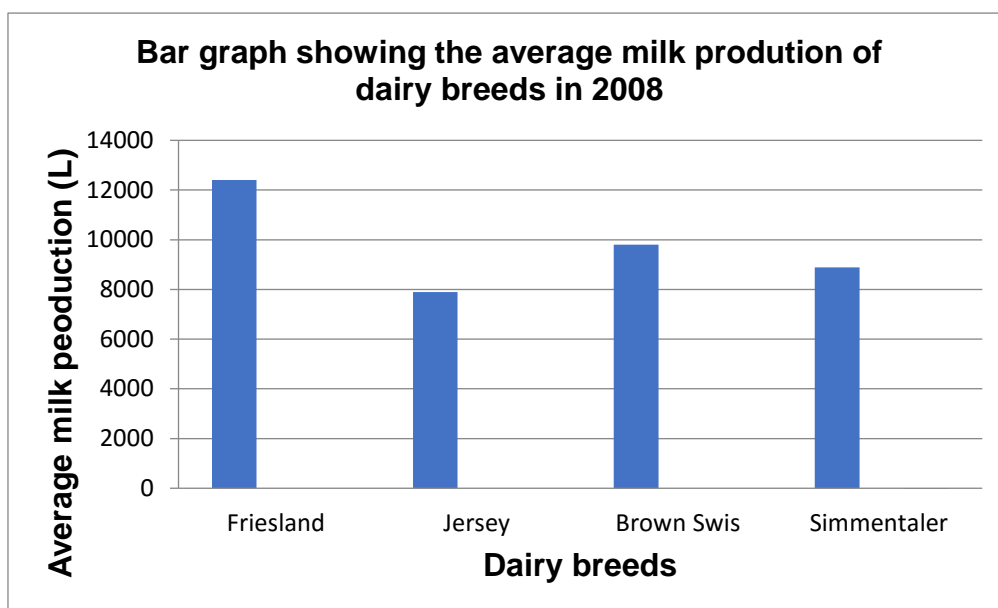
(2)

**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**