



Province of the  
**EASTERN CAPE**  
EDUCATION

**NATIONAL  
SENIOR CERTIFICATE**

**GRADE 10**

**NOVEMBER 2020**

**AGRICULTURAL SCIENCES P1  
MARKING GUIDELINE  
(EXEMPLAR)**

**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	C ✓✓		
	1.1.2	A ✓✓		
	1.1.3	A ✓✓		
	1.1.4	D ✓✓		
	1.1.5	C ✓✓		
	1.1.6	B ✓✓		
	1.1.7	C ✓✓		
	1.1.8	C ✓✓		
	1.1.9	D ✓✓		
	1.1.10	C ✓✓	(10 x 2)	(20)
1.2	1.2.1	B only ✓✓		
	1.2.2	Both A and B ✓✓		
	1.2.3	None ✓✓		
	1.2.4	Both A and B ✓✓		
	1.2.5	A only ✓✓	(5 x 2)	(10)
1.3	1.3.1	Community ✓✓		
	1.3.2	Food webs ✓✓		
	1.3.3	Labour tenancy ✓✓		
	1.3.4	Ruminants ✓✓		
	1.3.5	Layers ✓✓	(5 x 2)	(10)
1.4	1.4.1	Xerophytes ✓		
	1.4.2	Commercial ✓		
	1.4.3	Co-operatives/Pool ✓		
	1.4.4	Bos Taurus ✓		
	1.4.5	Saanen goat ✓	(5 x 1)	(5)
			<b>TOTAL SECTION A:</b>	<b>45</b>

**SECTION B****QUESTIONS 2: AGRI-ECOLOGY**

- 2.1 2.1.1 **The type of energy flow illustrated in the diagram.**  
• Ecological pyramid ✓ (1)
- 2.1.2 **The number of trophic levels on the diagram.**  
• 4 trophic levels ✓ (1)
- 2.1.3 **The letter from the diagram where the following occurs:**  
(a) D ✓ (1)  
(b) C ✓ (1)  
(c) A ✓ (1)
- 2.1.4 **The energy is transferred from letter C to letter B.**  
• The animals in letter **B** are predators/hunters. They kill and consume/eat ✓ the animals in letter **C**. ✓ (2)
- 2.1.5 **THREE abiotic components required by plants.**  
• Water ✓  
• Air/Carbon dioxide ✓  
• Soil ✓  
• Sunlight ✓ (Any 3 x 1) (3)
- 2.2 **Pastures and veld management**
- 2.2.1 **Definition of a pasture**  
• A pasture is an area of land that is covered with plants ✓ and which is used by animals for grazing or browsing. ✓ (2)
- 2.2.2 **The pasture that is poorly managed.**  
• Pasture **A** ✓ (1)
- 2.2.3 **The reason for your answer in QUESTION 2.2.2.**  
• The pasture is overgrazed ✓  
• Production is low ✓  
• Production is 350 kg ✓ (Any 2 x 1) (2)
- 2.2.4 **The reason why pasture B is well managed.**  
• The pasture is rested ✓  
• High production per month – 1 200 kg ✓  
• Pasture is not overgrazed ✓ (Any 2 x 1) (2)
- 2.2.5 **THREE farming practices that led to good pastoral condition.**  
• Stock rate ✓  
• Animal ratio ✓  
• Grazing systems ✓ (3)

**2.2.6 Calculation of percentage for pasture C**

- $350 \text{ kg} + 1\,200 \text{ kg} + 600 \text{ kg} + 900 \text{ kg} = 3\,050 \text{ kg}$  ✓
- $600 \text{ kg} / 3\,050 \text{ kg} \times 100$  ✓
- 19,7% ✓

(3)

**2.2.7 Feed to be produced at pasture D per year.**

- $900 \text{ kg} \times 12 \text{ months}$  ✓ = 10 800 kg per year ✓

(2)

**2.3 2.3.1 The biome represented by letters A and B.**

A – Fynbos ✓

B – Grass land ✓

(2)

**2.3.2 The biome that is suitable for the following activities:**

(a) Grassland biome/B ✓

(1)

(b) Fynbos/A ✓

(1)

(c) Forest Biome/C ✓

(1)

(d) Savannah/D ✓

(1)

**2.3.3 THREE South African biomes not mentioned in the table.**

- Nama-Karoo ✓
- Thicket ✓
- Succulent Karoo ✓

(Any 2 x 1)

(2)

**2.4 TWO negative effects of climate change in South Africa.**

- Reduced crop yield ✓
- Reduced livestock production ✓
- Reduced areas that are suitable for agriculture ✓
- Reduced soil fertility ✓
- Increased pests' attacks ✓
- Reduced labour force ✓

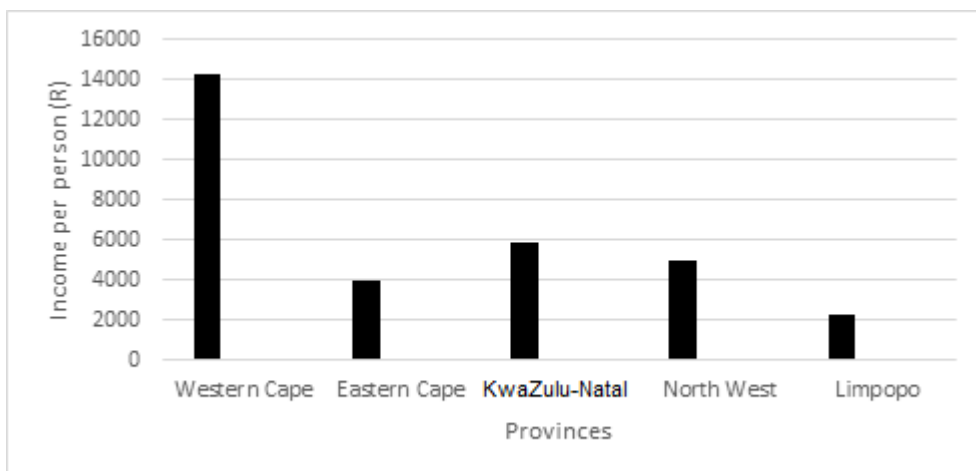
(Any 2 x 1)

(2)

**[35]**

**QUESTION 3: AGRO-INDUSTRY**

- 3.1 3.1.1 (a) **The province that is very rich.**  
 • Western Cape ✓ (1)
- (b) **The province that is very poor.**  
 • Limpopo ✓ (1)
- 3.1.2 **The reason for your answers to QUESTION 3.1.1.**  
 • Western Cape has more income per person ✓  
 • Limpopo has lowest income per person ✓ (2)
- 3.1.3 **The type of food depicted on the table.**  
 • Staple food ✓ (1)
- 3.1.4 **The reason why the food is mostly used by people.**  
 • It is a staple food ✓  
 • It is cheaper ✓ (Any 1 x 1) (1)
- 3.1.5 **THREE other types of food not mentioned in QUESTION 3.1.3**  
 • Fresh food ✓  
 • Processed food ✓  
 • Preserved food ✓ (3)
- 3.1.6 **The bar graph that shows the provinces and income per person.**

**Criteria for marking the graph**

- Correct heading ✓
- Bar graph ✓
- X-axis correctly calibrated/labelled (Provinces) ✓
- Y-axis correctly calibrated/labelled (Income per person) ✓
- Accuracy ✓
- Correct units (R) ✓ (6)

- 3.2 3.2.1 **The number of people in South Africa during the year 2000.**  
• 43/44 million ✓ (1)
- 3.2.2 **The trend depicted on the graph.**  
• From 1968 to 2000, ✓ the population increased/had been increasing. ✓ /  
• The population has been increasing ✓ over the number of years. ✓ (Any 1 x 2) (2)
- 3.2.3 **THREE negative effects of growing population in the agricultural sector.**  
• The demand for food increases ✓  
• Farms become more mechanised and fewer farm labourers are needed ✓  
• More people move to urban areas ✓  
• Urban areas grow larger ✓  
• The amount of agricultural land for food production decreases ✓  
• Natural resources are degraded and depleted ✓  
• Deforestation rates increase as more people need wood for fuel ✓  
• Grazing land degenerates ✓  
• Soil erosion due to poor farming practices ✓ (Any 3 x 1) (3)
- 3.3 3.3.1 **The models of landownership depicted in PICTURES A, B and C.**  
A – Communal land ✓  
B – Private land ✓  
C – State land ✓ (3)
- 3.3.2 **The picture from the diagram that matches the following laws.**  
(a) A/C ✓ (1)  
(b) B ✓ (1)
- 3.4 3.4.1 **The type of indigenous knowledge used by the farmer in the picture.**  
• Intercropping ✓ (1)
- 3.4.2 **The reason to support your answer to QUESTION 3.4.1.**  
• The farmer grows two different crops next to each other. ✓ (1)
- 3.4.3 **The reason for using intercropping**  
• The farmer wanted to control/prevent plant pests/diseases. ✓ (1)
- 3.4.4 **TWO products the farmer produces**  
• Maize ✓  
• Green beans ✓ (2)

### 3.4.5 The differences between indigenous knowledge and scientific knowledge

		<b>Indigenous knowledge</b>	<b>Scientific knowledge</b>
(a)	Age of the knowledge	Knowledge of the past. ✓ Old knowledge ✓	Knowledge of the present. ✓ New knowledge ✓
(b)	Method of learning	Learnt by experience ✓  Passed on through traditional rituals and storytelling ✓	Learnt by study and education ✓  Passed on through formal education and learning ✓

(4)  
[35]

## QUESTION 4: ANIMAL STUDIES

- 4.1 4.1.1 **By-product for cattle breeds**  
 • B ✓ – kraal manure ✓ (2)
- 4.1.2 **Identification of animal products**  
 (a) D ✓ (1)  
 (b) C ✓ (1)  
 (c) A ✓ (1)
- 4.1.3 **Examples of indigenous beef breeds.**  
 • Afrikaner ✓  
 • Bonsmara ✓  
 • Drakensberger ✓  
 • Nguni ✓ (Any 3 x 1) (3)
- 4.1.4 **Examples of dairy breeds not mentioned in QUESTION 4.1.2**  
 • Guernsey ✓  
 • Ayrshire ✓ (2)
- 4.2 4.2.1 **Grazers on the diagram**  
 • A/sheep ✓  
 • C/donkey ✓ (2)
- 4.2.2 **State whether animal B is a ruminant or non-ruminant.**  
 • Ruminant ✓ (1)
- 4.2.3 **Reason for the answer to QUESTION 4.2.2.**  
 • The animal has a complex stomach. ✓  
 • The animal is a goat. ✓  
 • The animal has four chambered stomach. ✓ (Any 1 x 1) (1)

- 4.2.4 **Reasons for the domestication of sheep.**
- Wool production ✓
  - Mutton production ✓
- (2)

- 4.2.5 **The farm animal from the diagram with the following qualities:**

- (a) **Adapted to desert areas and very loud vocalisation.**
- C / Donkey ✓
- (1)

- (b) **Resistant to fleece rotting and blowfly attack.**
- A / Sheep ✓
- (1)

- (c) **The animal is kept for meat production and it is indigenous.**
- B / Goat ✓
- (1)

- 4.2.6 **TWO differences between mohair fibres and wool fibres**

Mohair fibres	Wool fibres
Smooth and glossy ✓	Soft and whitish in colour ✓
Curly ✓	Wavy ✓
Hollow centre ✓	Solid in the centre ✓
Natural crease resistance. ✓	Elastic ✓
No scales on the outer surface ✓	Have scales on the outer surface ✓

(Any 2 x 2) (4)

- 4.3 4.3.1 **The disease that is experienced by many countries.**

- African swine fever ✓

- 4.3.2 **The animal that will be affected by African swine fever.**
- Pigs ✓
- (1)

- 4.3.3 **Explain how farmers can prevent the spread of African swine fever.**

The farmers must respect the rules, ✓ so that the disease does not become endemic. ✓

(2)

- 4.3.4 **Pork breeds**

- Minnesota ✓
- Duroc ✓
- Large white ✓
- Landrace ✓

(Any 2 x 1) (2)

- 4.4 4.4.1 **TWO requirements of healthy nest boxes for layers.**

- Warm ✓
- Dry ✓
- Protected ✓
- Water availability ✓
- Food availability ✓

(Any 2 x 1) (2)



4.4.2 **Basic requirements for successful production.**

- Housing ✓
- Management ✓
- Breeding ✓
- Nutrition/Feeding ✓

(Any 3 x 1) (3)

4.4.3 **The name of meat producing chickens.**

- Broilers ✓

(1)  
[35]

**TOTAL SECTION B: 105**  
**GRAND TOTAL: 150**