



education

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NORTH WEST PROVINCE**

PROVINCIAL ASSESSMENT

GRADE 10

AGRICULTURAL SCIENCE P1

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MARKING GUIDELINES

MARKS: 150

These marking guidelines consist of 10 pages.

SECTION A**QUESTION 1**

1.1	1.1.1	B ✓✓		
	1.1.2	A ✓✓		
	1.1.3	D ✓✓		
	1.1.4	C ✓✓		
	1.1.5	B ✓✓		
	1.1.6	D ✓✓		
	1.1.7	C ✓✓		
	1.1.8	D ✓✓		
	1.1.9	A ✓✓		
	1.1.10	B ✓✓	(10 x 2)	(20)
1.2	1.2.1	B Only ✓✓		
	1.2.2	A Only ✓✓		
	1.2.3	None ✓✓		
	1.2.4	A Only ✓✓		
	1.2.5	Both A and B ✓✓	(5 x 2)	(10)
1.3	1.3.1	Competition ✓✓		
	1.3.2	Industrialisation ✓✓		
	1.3.3	Raw materials ✓✓		
	1.3.4	Domesticate/domestication ✓✓		
	1.3.5	Poaching ✓✓	(5 x 2)	(10)
1.4	1.4.1	Aspect ✓		
	1.4.2	Edaphic ✓		
	1.4.3	Consumers/Parasites ✓		
	1.4.4	Subsistence ✓		
	1.4.5	Pigs ✓	(5 x 1)	(5)
TOTAL SECTION A:				45

SECTION B**QUESTION 2: AGRO-ECOLOGY****2.1 Grazing ecology**

- 2.1.1 **Natural change to pasture**
Ecological/plant succession ✓ (1)
- 2.1.2 **Term for the first type of plants**
Pioneer species ✓ (1)
- 2.1.3 **TWO methods to prevent overgrazing**
 - Rotational grazing ✓
 - Zero grazing ✓
(2)
- 2.1.4 **Definition of artificial pasture**
An area of land that has been planted ✓ with foreign plant species/other plants for grazing ✓ (2)

2.2 Pasture management

- 2.2.1 **Definition of pasture management**
The management of vegetation ✓ used for grazing ✓ (2)
- 2.2.2 **TWO reasons why pasture management is important**
 - A primary source of food for livestock ✓
 - A source of genetic material for pasture plants ✓
 - Well managed pastures keep a natural balance in the environment ✓
 - Pastures maintain agricultural resources ✓ (Any 2) (2)
- 2.2.3 **Explanation of rotational grazing**
More than one camp is allocated to each group of animals ✓ after a certain period the animals are taken to another camp so that the first camp can recover/rest ✓ (2)
- 2.2.4 **TWO veld management practices**
 - Stocking rate ✓
 - Animal Ratio ✓
 - Veld burning ✓ (Any 2) (2)

2.3 Stocking rate

- 2.3.1 **THREE factors that will influence the stocking rate**
 - Grazing management ✓
 - Weather conditions/draughts/floods ✓
 - Forage intake ✓
 - Plant vigour/how fast plants regrow ✓ (Any 3) (3)
- 2.3.2 **Explanation of TWO consequences of a too high stocking rate**
 - There will be a decrease ✓ in the production levels of animals ✓
 - The production potential ✓ of the veld will decrease/decline ✓ (4)

2.4 Biomes

2.4.1 Another word/term for ecological regions

Biomes ✓

(1)

2.4.2 Examples of fauna found in the fynbos area

- Shrubs/bushes with hard leaves ✓
- Reeds ✓
- Woody shrubs ✓
- Wiry shrubs ✓
- Bulb plants ✓
- Ericoids ✓
- Sedges ✓
- Protea trees ✓

(Any 2) (2)

2.4.3 TWO ecological areas with low rainfall

- Nama karoo ✓
- Karoo ✓

(2)

2.4.4 TWO ecological areas producing the bulk of animal forage material

- Savanah ✓
- Grass land ✓

(2)

2.5 Global warming

2.5.1 Formulate a caption for the diagram.

The diagram below showing the global warming/greenhouse effect ✓✓

(2)

2.5.2 TWO human action causing the phenomenon in QUESTION 2.5.1

- Burning of fossil fuels ✓
- Factories that emit smoke/CO₂ ✓
- Use of motor vehicles ✓
- Coal power stations that emit smoke/CO₂ into the air ✓
- Deforestation ✓
- Industrialisation ✓
- Air pollution ✓

(Any 2) (2)

2.5.3 THREE impacts of global warming on agriculture

- A rise in sea level/less agricultural land ✓
- Inability of species to adapt to higher temperatures
- Extinction of some species ✓
- Unpredictable weather/seasons ✓
- Droughts ✓
- Flooding ✓
- Increase in temperature ✓

(Any 3) (3)

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QUESTION 3: AGRO-INDUSTRY**3.1 Agricultural economics****3.1.1 TWO contributions of agriculture towards S.A's economic status**

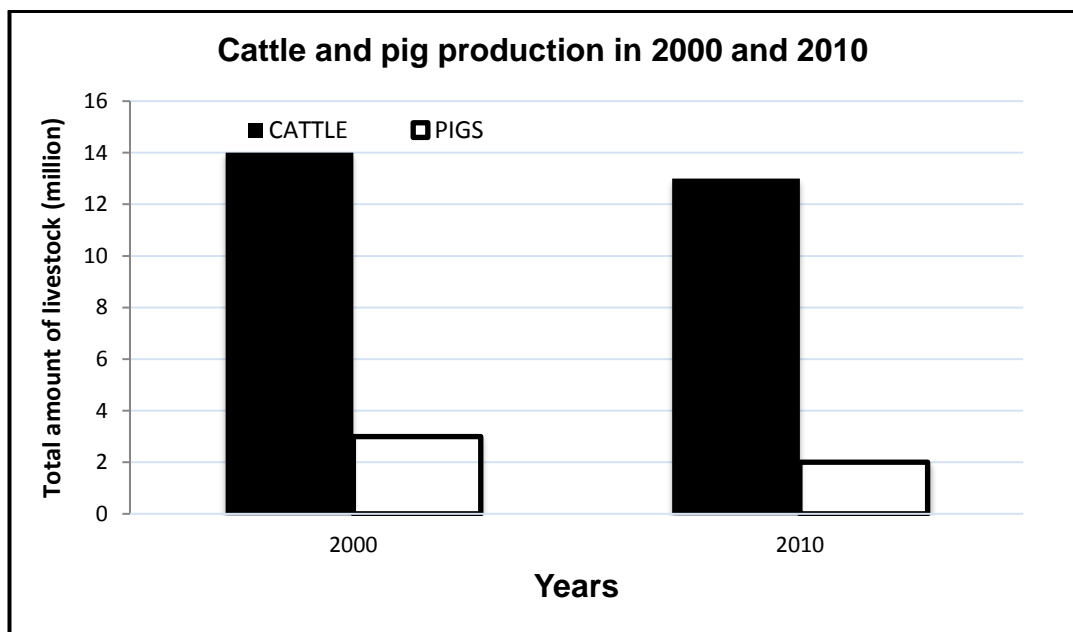
- Food production ✓
- Raw material ✓
- Employment/job creation ✓
- Food security ✓
- Rural development ✓
- Economic stability ✓
- Conservation ✓

(Any 2) (2)

3.1.2 General trend of the livestock totals between 2000 and 2010

There is a decline/less/lower ✓ totals in live stock ✓

(2)

3.1.3 Draw a combined graph of the cattle and pig totals for the years 2000 and 2010**Criteria/Rubric/Marking guidelines**

- Correct heading ✓
- X-axis: Correctly calibrated with label (Years) ✓
- Y-axis: Correctly calibrated with label (Amount) ✓
- Correct unit (millions) ✓
- Bar graph ✓
- Accuracy ✓

(6)

3.1.4 Calculate the difference in sheep and pig production from 2000 - 2010

- $32 - 25$ ✓
- $= 7$ million ✓

(2)

3.2 Food products

3.2.1 TWO other types of food preservation methods

- Smoking ✓
- Processing/processed ✓
- Cooking ✓
- Salting/curing ✓
- Freezing/refrigeration ✓
- Drying ✓
- Pasteurisation/sterilisation ✓
- Vacuum packing ✓
- Sugaring ✓
- Pickling ✓

(Any 2) (2)

3.2.2 TWO reasons for the preserving of food

- To prevent it from going rotten/spoilage ✓
- To prolong shelf life of a product ✓
- To slow down ripening/loss of quality ✓

(Any 2) (2)

3.2.3 Distinguish between

Fresh food - Mainly vegetables/fruit that are bought/eaten fresh/raw ✓

Staple food - Foods forming the major basis of the diet of a population/
cheap/available/accessible ✓

(2)

3.2.4 Knowledge system allowing us to know Mopanie worms are edible

Indigenous knowledge systems/IK ✓

(1)

3.3 Agricultural legislation

3.3.1 Differentiate between

Constitution - The supreme law of the country providing the basic principles according to which all laws passed must comply ✓

(1)

Green paper - A preliminary report on government's proposal for a new or amended law ✓

(1)

3.3.2 THREE aspects of agriculture that is covered by different laws

- Labour laws ✓
- Land laws ✓
- Marketing laws ✓
- Resource protection laws ✓
- Disease and parasite laws ✓
- Input resources laws ✓
- Animal welfare laws ✓

(Any 3) (3)

3.4 Agricultural organisations

3.4.1 TWO functions of the Department of Agriculture

- Run/maintain agricultural research facilities ✓
- Maintain/improve phytosanitary status of the country ✓
- Ensure the safety/effectiveness of the agricultural inputs ✓
- Combat introduction and spread of livestock diseases and parasites ✓
- Facilitate and provide education/training in agriculture ✓
- Provide financial assistance to farmers
- Promote conservation of the country's natural resources ✓ (Any 2) (2)

3.4.2 Give the full names of the following

(a) **ARC** - Agricultural Research Council ✓ (1)

(b) **NAMC** - National Agricultural Marketing Council ✓ (1)

(c) **CSIR** - Council for Scientific and Industrial Research ✓ (1)

3.4.3 TWO benefits/advantages of agricultural organisations

- Research findings benefits farmers ✓
- Provides information to the farmers ✓
- Informs farmers of the latest trends/news/development in agriculture ✓
- Provides training/education ✓ (Any 2) (2)

3.5 Food security in South Africa

3.5.1 Explanation of the concept food security

A measure of the sustainable availability ✓ and access to food for all the people of South Africa ✓ (2)

3.5.2 TWO threats on food security in South Africa

- Natural resources/land/water/energy ✓
- Labour ✓
- Biodiversity ✓
- Climatic conditions/changes ✓
- Economic stability ✓
- Political policy/climate/world trends ✓ (Any 2) (2)

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QUESTION 4: ANIMAL STUDIES**4.1 SA cattle breeds****4.1.1 Identification of the breed**

Nguni ✓ (1)

4.1.2 TWO characteristics of this breed

- Multi-coloured hide ✓
 - Horns have a variety of shapes ✓
 - Medium frame/sized ✓
 - Noses are black tipped ✓
- (Any 2) (2)

4.1.3 Scientific name under which this breed falls

Bos indicus ✓ (1)

4.1.4 TWO characteristics of a bull

- Compact frame ✓
 - Block-like build ✓
 - Reproductive soundness/vigour ✓
 - Short neck ✓
 - Broad face ✓
 - Heavy slaughter weight ✓
- (Any 2) (2)

4.1.5 ONE other indigenous SA breeds

- Bonsmara ✓
 - Afrikaner ✓
 - Drakensberger ✓
- (Any 1) (1)

4.2 Types of cattle**4.2.1 Identification of the purpose for BREED A and BREED B**

Breed A - Milk production ✓ (1)

Breed B - Dual purpose (milk and beef) ✓ (1)

4.2.2 Name of BREED A

Jersey ✓ (1)

4.2.3 TWO characteristics of BREED A

- Fawn/light brown in colour ✓
 - Black nose with light border if purebred ✓
 - Relatively small size ✓
 - Efficient food converters ✓
 - Low maintenance cost ✓
 - Cow are highly fertile ✓
 - Most efficient dairy producers ✓
 - Milk has a high butterfat content/yellow ✓
 - Extreme leanness/hollow back ✓
- (Any 2) (2)

- 4.2.4 **TWO other cattle breeds with the same purpose as BREED A**
- Guernsey ✓
 - Friesland/Holstein ✓
 - Ayrshire ✓
- (Any 2) (2)
- 4.3 **Sheep and goats**
- 4.3.1 **Identification from the photo's**
- A - Merino** ✓ (1)
- B - Goat** ✓ (1)
- 4.3.2 **ONE characteristics of BREED A**
- Medium to large framed ✓
 - White Woolled ✓
 - Rams have long spiral horns ✓
 - Not a high quantity of meat ✓
 - Excellent conformation ✓
 - Excellent foragers ✓
 - Outstanding growth rate ✓
 - Most economic converters of feed to mutton and wool ✓
 - Ewes have excellent reproductive abilities ✓
 - Good mothering abilities ✓
- (Any 1) (1)
- 4.3.3 **The purpose of BREED B**
- The production of meat ✓ (1)
- 4.3.4 **Explain how BREED B originated**
- By crossing the Native African goats ✓ with the European dairy breeds ✓ (2)
- 4.3.5 **Product of the Angora goat**
- Mohair ✓ (1)
- 4.4 **Poultry**
- 4.4.1 **TWO types of production systems in chicken production**
- Laying hen/egg production ✓
 - Broiler/meat production ✓
- (2)
- 4.4.2 **ONE type of indigenous chicken breed**
- Potchefstroom Koekoek ✓
 - Boschvelder ✓
 - Ovambo ✓
 - Venda ✓
 - Naked-Neck ✓
 - Natal game ✓
- (Any 1) (1)

4.4.3 FOUR requirements for successful poultry production

- Good/sufficient/effective housing ✓
- Proper management system ✓
- Breeding ✓
- Nutrition ✓
- Proper health care system/biosecurity ✓

(Any 4) (4)

4.5 Game farming in S.A.**4.5.1 TWO reasons why elephants are endangered**

- Loss of habitat ✓
- Poaching for their tusks ✓

(2)

4.5.2 Explain why rhinos are killed for their horns

In the Far East ✓ it is believed that the horn of the rhinos have medicinal properties ✓

(2)

4.5.3 THREE importance's of game farming in S.A

- Generates income/business opportunities ✓
- Job creation ✓
- Helps with economic growth/foreign exchange/currency ✓
- Helps with preservation of natural habitats ✓
- Create infrastructure/development in the rural areas ✓

(Any 3) (3)

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TOTAL SECTION B: 105
GRANDTOTAL : 150