Education and Sport Development

Department of Education and Sport Development
Departement van Onderwys en Sportontwikkeling
Lefapha la Thuto le Tlhabololo ya Metshameko
NORTH WEST PROVINCE

PROVINCIAL ASSESSMENT

GRADE 10

AGRICULTURAL SCIENCES

JUNE 2018

MARKS: 150

TIME: 2½ hours

This question paper consists of 12 pages.

INSTRUCTIONS AND INFORMATION

1. Answer ALL the questions in the ANSWER BOOK
2. This question paper consists of TWO sections: SECTION A and B.
3. Start EACH question in SECTION B on a NEW page.
4. Number the answers correctly according to the numbering system used.
5. You may use a non-programmable calculator.
6. Show ALL your calculations, including formulae, where applicable.
7. Write neatly and legibly.

SECTION A
QUESTION 1

1.1 Various options are provided as possible answers to the following questions. Choose the correct answer and write only the letter (A–D) next to the question number (1.1.1 – 1.1.10) in your ANSWER BOOK, for example 1.1.11 D.

1.1.1 The smallest biome in South Africa.

A Fynbos
B Nama Karoo
C Savanna
D Forest

1.1.2 The living organisms that get their food by breaking down plants and animals remains.

A Producers
B Decomposers
C Secondary consumers
D Primary consumers

1.1.3 The process in the water cycle in which water falls back to the earth in the form of rain.

A Precipitation
B Evaporation
C Transpiration
D Absorption

1.1.4 Mutualism, commensalism and parasitism refers to the …

A difference between an organism and ecology.
B relationship amongst organisms in an ecology.
C interaction in a plantation.
D effects of climate change.

1.1.5 Chicken, ducks, geese and turkey are examples of ...

A bovines
B poultry
C small stock
D large stock

1.1.6 The following pig breeds are examples of commercial breeds except …

A Duroc
B Large white
C Landrace
D Kolbroek

1.1.7 Sheep are kept on a farm mainly to produce …

A wool.
B bacon
C eggs
D mohair

1.1.8 …provide for compensation to those who lost their land in the past.

A Redistribution
B Tenure
C Restitution
D Ownership

1.1.9 An example of a greenhouse gas.

A Oxygen
B Methane
C Argon
D Nitrogen

1.1.10 One of the following is NOT a physiographic factor.

A Altitude
B Aspect
C Slope
D Length of the day

(10 x 2) (20)

1.2 Chose a term in COLOMN A that matches a description in COLOMN B. **A ONLY**, **B ONLY**, **BOTH A AND B**, or **NONE** of the items in COLOMN A. Write: **A only, B only, A and B both** or **none** next to the question number (1.2.1 – 1.2.5) in the ANSWER BOOK, for example 1.2.6. B only.

COLOMN A			COLOMN B
1.2.1	A	Sweet veld	The type of veld where the rainfall varies around 4mm per year.
	B	Sour veld	
1.2.2	A	Pork	Meat produces by sheep.
	B	Mutton	
1.2.3	A	Processing	The changing of food from their natural state for safety and convenience.
	B	Bruising	
1.2.4	A	Global warming	Caused by natural and man-made factors.
	B	Urbanization	
1.2.5	A	Organic farming	Crops and animals are produced by people for selling to big companies
	B	Commercial farming	

(5 x 2) (10)

1.3 Give ONE word/term for each of the following descriptions. Write only the word/term next to the question number (1.3.1 - 1.3.5) in the ANSWER BOOK.

1.3.1 An area that is home to certain types of plants which are suited to the climate of that area.

1.3.2 The first community to occupy a bare area in plant succession.

1.3.3 The ability of a country to produce enough food for all the people.

1.3.4 Cutting down of natural tress.

1.3.5. An area of plants covered which are used for feeding livestock.

(5 x 2) (10)

1.4 Change the UNDERLINED WORD/S in each of the following statements to make them TRUE. Write only the answer next to the question number (1.4.1-1.4.5) in the ANSWER BOOK.

1.4.1 Plants that are adaptable to very dry areas are called hydrophytes.

1.4.2 Commercial farming is a production system on a small scale whereby the farmer produce products only for themselves.

1.4.3 Dairy breeds have a body conformation with increased muscle description.

1.4.4 Sweet veld is usually found on acid soil with low fertility.

1.4.5 Movement of people from rural areas to big towns and cities is called capitalism.

(5 x 1) (5)

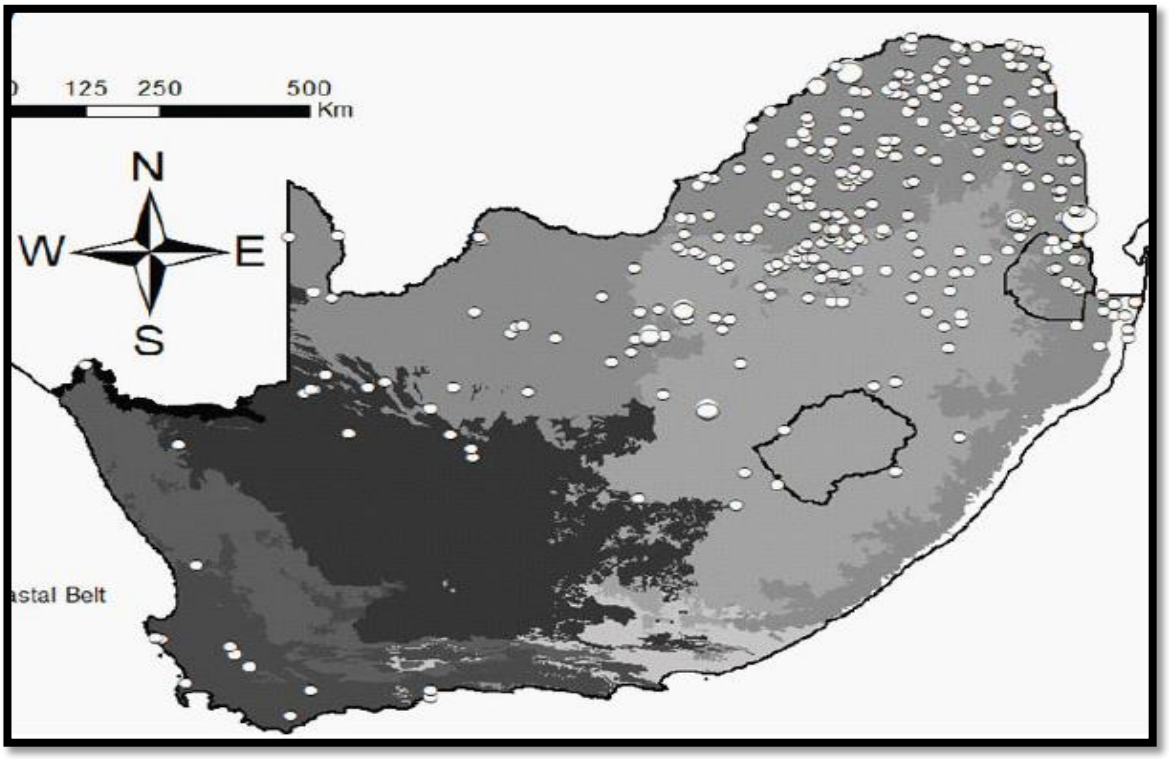
TOTAL SECTION A: [45]

SECTION B

Start this Question on a NEW page.

QUESTION 2: AGRO-ECOLOGY AND INDUSTRY

2.1 Study the map below of South African biomes and answer the questions that follows.



2.1.1 Name SEVEN South African biomes. (7)

2.1.2 During which season does rain fall in the forest biome? (1)

2.1.3 Name TWO abiotic factors that determine the type of plants that occur in a biome. (2)

2.2. Copy and complete the following table comparing sour veld and sweet veld.

Factor	Sour Veld	Sweet Veld
Rainfall	2.2.1	2.2.5
Winter temperature	2.2.2	2.2.6
Palatability	2.2.3	2.2.7
Nutritive value	2.2.4	2.2.8

(8)

2.3 Symbiosis is the ecological relationship between organisms of different species. Explain each of the following types of symbiosis and give ONE example of each.

2.3.1 Mutualism (2)

2.3.2 Parasitism (2)

2.4 Briefly discuss FOUR human activities that effect existing ecosystems. (4)

2.5 Peruse the case study below thoroughly and answer the questions that follow.

THE BACKGROUND TO LAND REFORM IN SOUTH AFRICA.

The Native Land Act of 1913 restricted black farmers to reserves or homelands. Under the apartheid system, 19 million black South Africans were confined to just 13% of the land. The rest of the land (87%) belonged to 60 000 white farmers and the state. This meant that 42% of population was confined to 13% of the land.

The new, free democratic government came into power in 1994. The new government has introduced a land reform policy that aims to correct the wrongs of the past. It aims to do this in an orderly, legal and transparent manner.

Between 1960 and 1983, about 475 000 people were moved to the homelands. During this time the population of QwaQwa, the former homeland in the Free State, grew from 25 334 people to 500 000 people. The land could not support all these extra people and animals.

2.5.1 State any TWO of the land reform programmes that were established after 1994. (4)

2.5.2 With reference to the land reform programs that was established in 1994, the main aim was to correct the wrongs of the past. Briefly explain what exactly happened in the past that has to be corrected. (4)

2.5.3 Deduce from the case study how many people were moved to the homelands between 1960 and 1983. (1)

2.5.4 Which homeland and province was affected by population growth. (2)

[35]

Start this question on a NEW page.

QUESTION 3: ANIMAL STUDIES

3.1 The data below represents two communities in different farming co-operation. Study the table and answer the questions below.

Community	**1**	**2**
Breed	Angora goat	Boer goat

3.1.1 Browsers prefer to eat leaves from trees and shrubs above ground e.g. goats. Name one characteristics which allow goats to stand up and reach the leaves. (1)

3.1.2 Identify the community from the table that farm with breeds kept for mohair. (1)

3.1.3 Indicate FOUR economic importance of mohair. (4)

3.1.4 Boer goats can survive and grow in harsh conditions, state FIVE characteristics of Boer goats. (5)

3.2 Farm animals are classified according to the manner in which their alimentary canal functions.

3.2.1 Distinguish between ruminants and non-ruminants by tabulating TWO differences in each type. (4)

3.2.2 Discuss FIVE importance of animals to man. (5)

3.3 The table on the next page shows the average milk and butter fat production levels of various dairy breeds.

Dairy breeds	Milk yield	Butter fat context (%)
Friesland	64	4
Jersey	58	5
Guernsey	40	4
Holstein	35	3
Ayrshire	42	3

3.3.1 Draw a bar graph representing the milk yield of the various dairy breeds. (5)

3.3.2 Deduce from the table, one of the above mentioned breeds that can be recommended for:
(a) Milk production (1)
(b) Highest fat content (1)

3.3.3 Tabulate FOUR differences between extensive and intensive farming. (8)

[35]

Start this question on a NEW page.

QUESTION 4: SUSTAINABLE NATURAL RESOURCE UTILISATION

4.1 Differentiate between primary resources and secondary resources. (4)

4.2 Define the following terms:

4.2.1 Renewable resources (2)

4.2.2 Non-renewable resources (2)

4.2.3 Sustainable agriculture. (2)

4.3 Peruse the case on the next page thoroughly and answer the questions that follow.

A Grade 10 class visited a farm in the Kwazulu-Natal coastal grasslands. The farmer mainly farms sugarcane and cattle. The fields are cultivated pastured of sweet meadow and Lucerne. Indigenous and alien trees grow on the river banks. For a high sugarcane yield, the farmer sprays pesticides to protect the leaves against pests.

The farmer uses wind energy to irrigate the sugarcane fields and pastures. He keeps some of the cattle in feedlots and sell them once they reach a live mass of 200 kg. The farmer uses the manure from the feedlots to fertilize the cultivated pastures and sugarcane field .The soil is a deep fertile, sandy loam soil and the farmer tests the salt content of the soil every year.

4.3.1 Name TWO natural resources used by the farmer. (2)

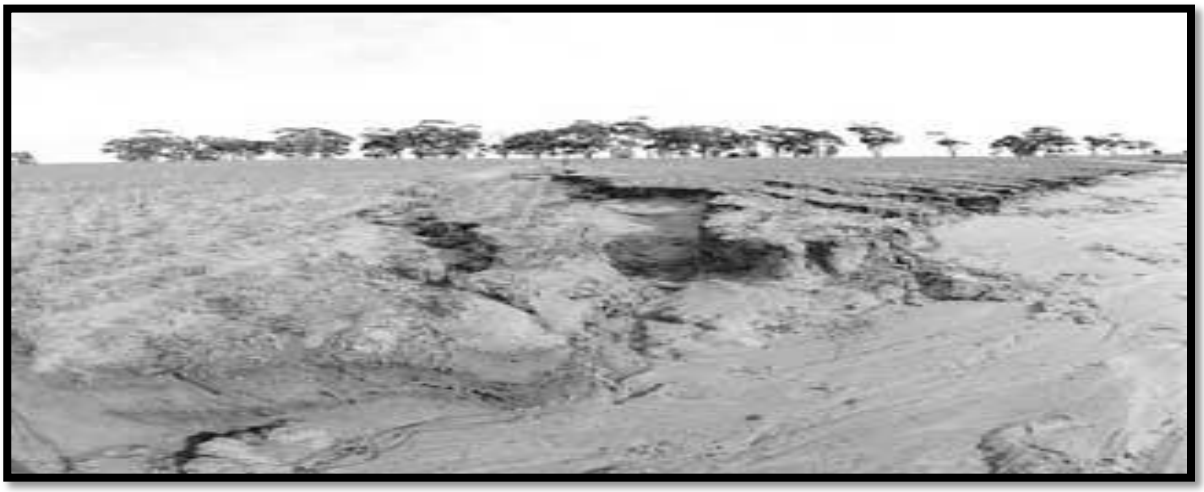
4.3.2 Name TWO secondary resources used by the farmer. (2)

4.3.3 Describe TWO ways in which the farmer is using resources sustainable. (4)

4.3.4 Name ONE farming practice that the farmer is using that has a negative effect on the environment. (2)

4.3.5 Suggest a more environment friendly practice as alternative, to the one that you named in 4.3.4. (2)

4.4 Look at the picture below and answer the question that follows.



4.4.1 Define the term soil degradation. (2)

4.5 Poor agricultural practices cause degradation of soil.

4.5.1 List FIVE poor agricultural practices that can cause soil degradation. (5)

4.6 Copy the table below and fill in the spaces in the table by choosing the correct effect of soil degradation from the list.

Soil erosion, waterlogging, loss of soil organisms, salinization, acidification, nutrient imbalance, soil crusting

Physical degradation	Chemical degradation	Biological degradation
(a)	(d)	(f)
(b)	(e)	
(c)		

(6)

[35]

TOTAL SECTION B: 105

GRAND TOTAL: 150