education

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NORTH WEST PROVINCE

PROVINCIAL ASSESSMENT

GRADE 10

AGRICULTURAL SCIENCE P1

NOVEMBER 2019

MARKS: 150

TIME: 2½ hours

This question paper consists of 12 pages.

INSTRUCTIONS AND INFORMATION

1. This question paper consists of TWO sections, namely SECTION A and SECTION B.
2. Answer ALL the questions in the ANSWER BOOK.
3. Start EACH question on a NEW page.
4. Number the answers correctly according to the numbering system used in this question paper.
5. You may use a non-programmable calculator.
6. Show ALL the 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 answer and write only the letter (A–D) next to the question number (1.1.1 to 1.1.10) in the ANSWER BOOK, for example 1.1.11 D.

1.1.1 The largest in terms of the levels of organisation in ecology.

A Biome.
B Biosphere.
C Community.
D Ecosystem.

1.1.2 Individual organisms of the same kind are known as …

A species.
B biotic components.
C a genus.
D autotrophs.

1.1.3 An important function of decomposers.

A Releasing oxygen into the atmosphere.
B Act as secondary consumers.
C Produce food for primary consumers.
D Speeds up the decaying process that releases minerals into the food chain.

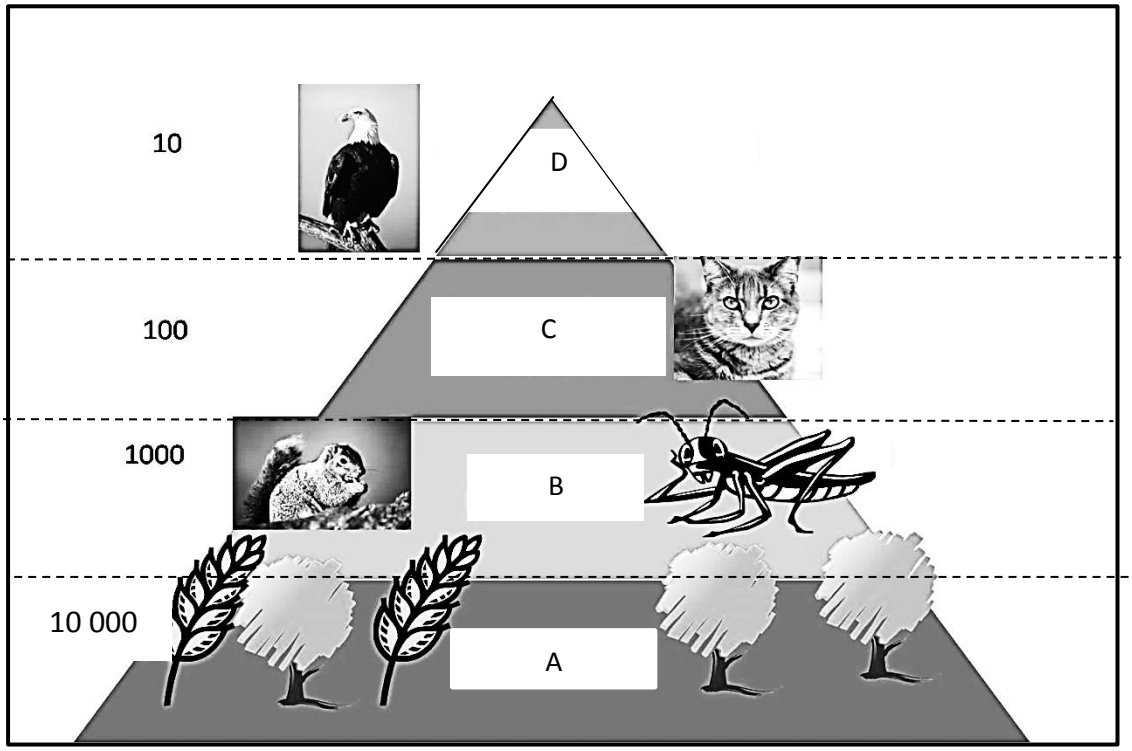
1.1.4 Plants that are adapted to very wet conditions.

A Mesophytes.
B Xerophytes.
C Hydrophytes.
D Edaphytes.

1.1.5 A physiographic factor.

A Light intensity.
B Slope.
C pH of the soil.
D CO_2 concentration in the air.

The diagram below refers to question 1.1.6 to 1.1.8



1.1.6 The diagram above represents a …

A food web.
B pyramid of living organisms.
C pyramid of biomass.
D pyramid of numbers.

1.1.7 The ratio between the producers and secondary consumers are …

A 1:100.
B 10:100.
C 100:1.
D 100:10.

1.1.8 The level that represents the largest biomass in the pyramid.

A Level D.
B Level C.
C Level B.
D Level A.

1.1.9 The right sequence that takes place during the water cycle:

A Evaporation → condensation → cloud formation → precipitation → run-off into streams
B Condensation → presipitation → cloud formation → evaporation → run-off into streams
C Precipitaion → run-off into streams → cloud formation → evaporation→ condensation
D Cloud formation→ precipitation → condensation → run-off into streams → evaporation

1.1.10 An ectoparasite:

A Lives within its host
B Lives externally on the host
C Visits the host at certain intervals
D Never harms its host (10 x 2) (20)

1.2 Indicate whether each of the descriptions in COLUMN B applies to **A ONLY, B ONLY, BOTH A AND B or NONE** of the items in COLUMN A. Write **A only, B only, both A and B or none** next to the question number (1.2.1 to 1.2.5) in the ANSWERBOOK, for example 1.2.6 B only.

COLUMN A			COLUMN B
1.2.1	A	Make use of expensive resources	Sustainable agriculture
	B	Integrate natural biological controls	
1.2.2	A	Managed for grazing	Artificial pastures
	B	Cultivate maize on it	
1.2.3	A	Many different grass species	Flora of Forests
	B	Snakes and large bird life	
1.2.4	A	Return land to communities	Land Restitution
	B	Change tenure laws	
1.2.5	A	Disease and parasite law	Animal Disease Control
	B	Promotes animal health	

(5 x 2) (10)

1.3 Give ONE word/term/phrase for EACH of the following descriptions. Write only the word/term/phrase next to the question number (1.3.1 to 1.3.5) in the ANSWERBOOK.

1.3.1 Interaction between organisms, in the same area, that utilise the same resources

1.3.2 If there is an increase in mechanisation and industries

1.3.3 Agricultural products used in the secondary industries to manufacture finished products for human consumption

1.3.4 The process of catching wild animals and taming them

1.3.5 When wild game is hunted and slaughtered illegally (5 x 2) (10)

1.4 Change the UNDERLINED WORD in EACH of the following statements to make it TRUE. Write only the answer next to the question number (1.4.1 to 1.4.5) in the ANSWERBOOK.

1.4.1 <u>Altitude</u> is the direction in which slope faces.

1.4.2 <u>Physiographic</u> factors, are factors that relate to soil.

1.4.3 <u>Producers</u> are organisms that rely on other organisms for nutrients.

1.4.4 <u>Commercial</u> agriculture is small scale and informal.

1.4.5 Minnesota and Hampshire are examples of <u>chicken</u> breeds. (5 x 1) (5)

TOTAL SECTION A: 45

SECTION B

QUESTION 2: AGRO-ECOLOGY

Start this question on a NEW page.

2.1 The photo below represents TWO conditions of natural veld.

2.1.1 If Side **B** was left for 5 years without any interference, the veld will change. Name this natural change that will take place. (1)

2.1.2 Provide a term for the first type of plants that will grow on side **B** during the first year. (1)

2.1.3 Name TWO methods the farmer could use to prevent side **A** from becoming like side **B**. (2)

2.1.4 Define the term *artificial pasture*. (2)

2.2 Pasture management is a very important tool in livestock faming.

2.2.1 Define the underlined term. (2)

2.2.2 Justify TWO reasons why pasture management is important. (2)

2.2.3 Explain the term *rotational grazing*. (2)

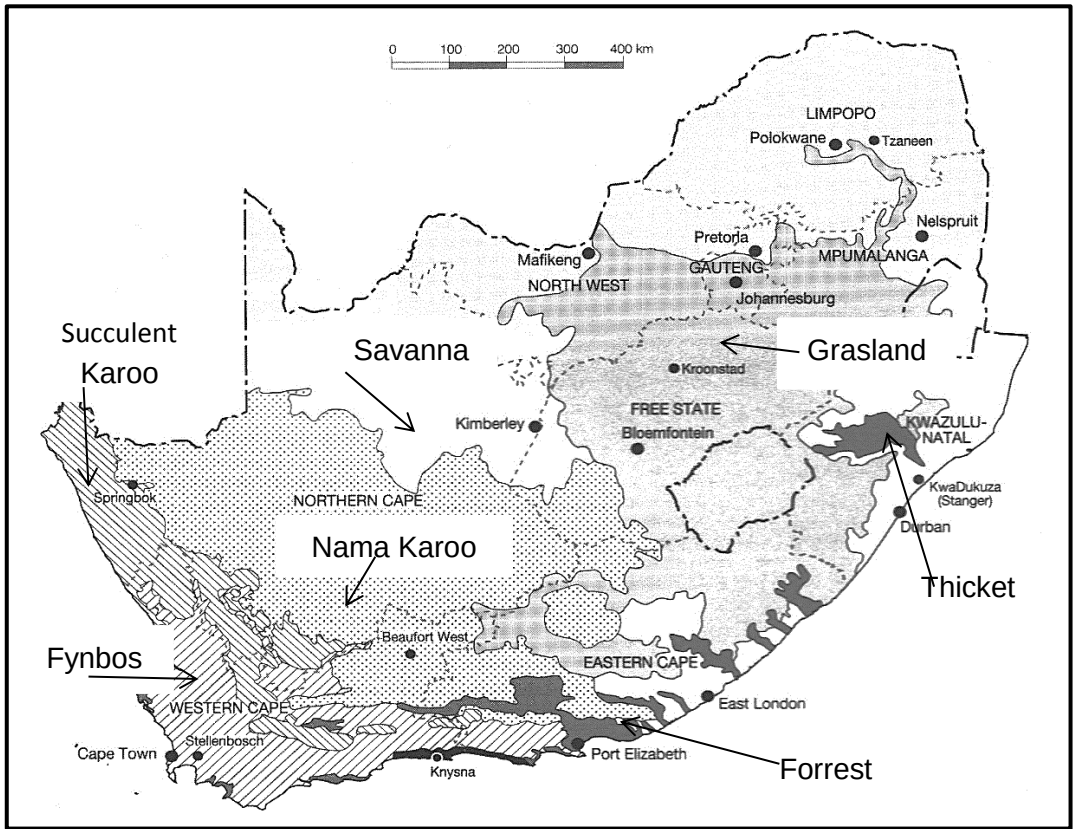
2.2.4 Name TWO OTHER veld management practises. (2)

2.3 Stocking rate is the number of animals of a particular class, per unit area of land for a specific time.

2.3.1 List THREE factors that will influence the stocking rate. (3)

2.3.2 Explain TWO consequences if the stocking rate is too high. (4)

2.4 The map below shows the most important **ecological regions** in South Africa.



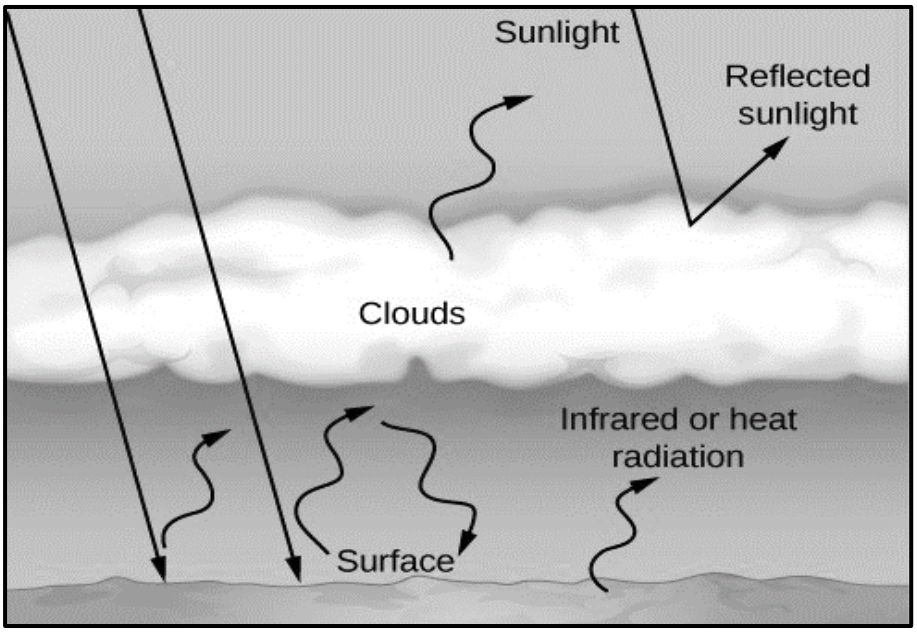
2.4.1 Write down another term for the words printed in bold above the map. (1)

2.4.2 Give TWO examples of flora found in the the fynbos area. (2)

2.4.3 Identify, from the map above, TWO ecological areas with low rainfall averages per year. (2)

2.4.4 Name TWO ecological areas that produce the bulk of animal forage material. (2)

2.5 The diagram below represents a certain natural phenomenon.



2.5.1 Formulate a suitable caption for the diagram. (2)

2.5.2 Give TWO human actions that cause the phenomenon, formulated in QUESTION 2.5.1. (2)

2.5.3 Propose THREE impacts of this phenomenon on agriculture. (3)
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QUESTION 3: AGRO-INDUSTRY

Start this question on a NEW page.

3.1 The table below shows the number of different livestock in S.A. in the year 2000 and 2010.

LIVE STOCK	TOTAL IN 2000 (millions)	TOTAL IN 2010 (millions)
Cattle	14	13
Sheep & Goats	32	25
Pigs	3	2

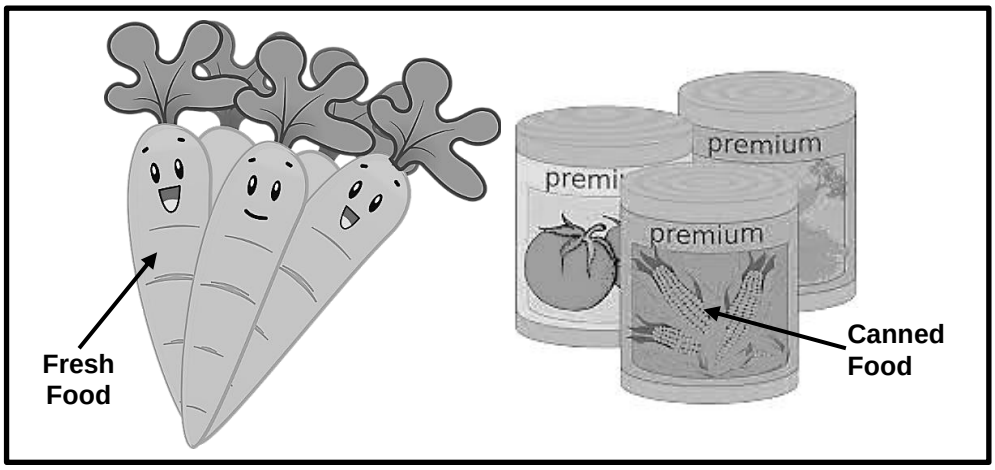
3.1.1 Describe TWO important contributions that agriculture makes towards S.A's economic status. (2)

3.1.2 Deduce from the table above the general trend of the totals in live stock between 2000 and 2010. (2)

3.1.3 Draw a combined bar graph of the cattle and pigs totals for the years, 2000 and 2010. (6)

3.1.4 Calculate the difference in the total sheep and goat production from 2000 to 2010. (2)

3.2 The diagram below shows two different states of food.



3.2.1 State TWO other methods of food preservation. (2)

3.2.2 Provide TWO reasons why it is necessary to preserve food. (2)

3.2.3 Distinguish between *fresh food* and *staple food*. (2)

3.2.4 Indicate the knowledge system that allows us to know that Mopanie worms are edible. (1)

3.3 For agriculture to run effectively there must be legislation to regulate what and how this should happen

3.3.1 Differentiate between *The Constitution* and a *Green paper.* (2)

3.3.2 List THREE aspects of agriculture that is covered by different laws. (3)

3.4 Agricultural organisations.

3.4.1 Provide TWO functions of the Department of Agriculture. (2)

3.4.2 Give the full names for the following agricultural orginisations:

(a) ARC (1)

(b) NAMC (1)

(c) CSIR (1)

3.4.3 Provide TWO advantages of agricultural organisations. (2)

3.5 Food security in South Africa.

3.5.1 Explain the concept *food security* in South Africa. (2)

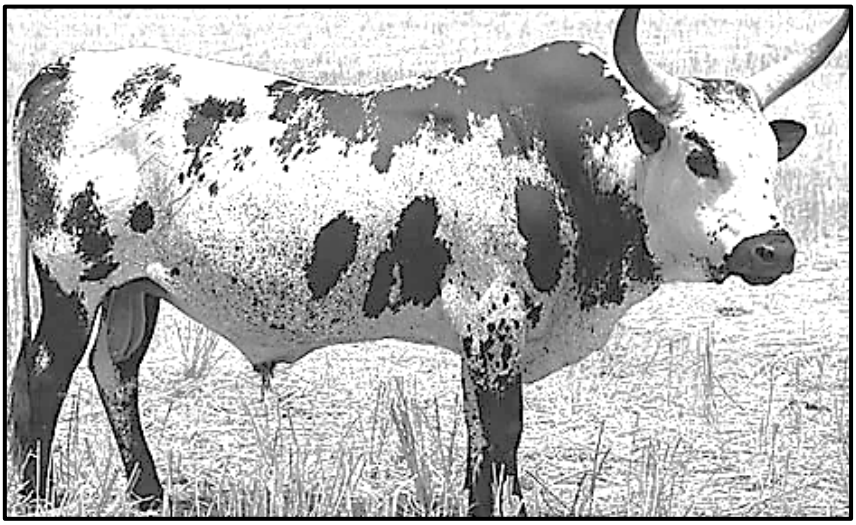
3.5.2 Indicate TWO threats on food security in South Africa. (2)

[35]

QUESTION 4: ANIMAL STUDIES

Start this question on a NEW page.

4.1 The photo below represents a S.A cattle breed.



4.1.1 Identify the type of breed that this bull belongs to. (1)

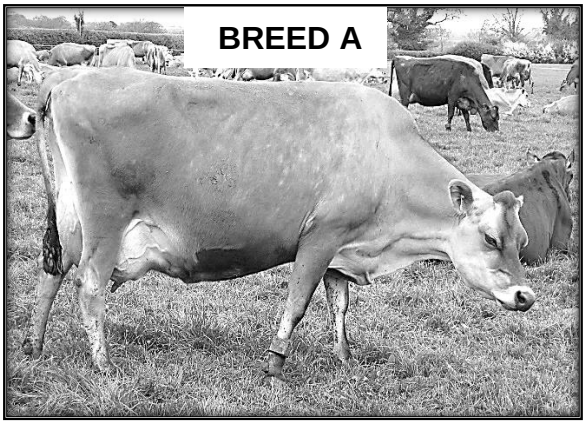
4.1.2 Identify, from the photo above, TWO characteristics of this breed. (2)

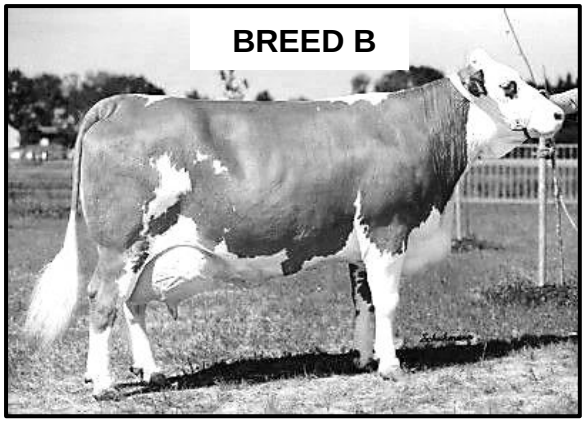
4.1.3 Give the scientific name under which this breed falls. (1)

4.1.4 List TWO characteristics of a bull. (2)

4.1.5 Name ONE other indigenous South African cattle breeds. (1)

4.2 The pictures below represents TWO cattle breeds in S.A.





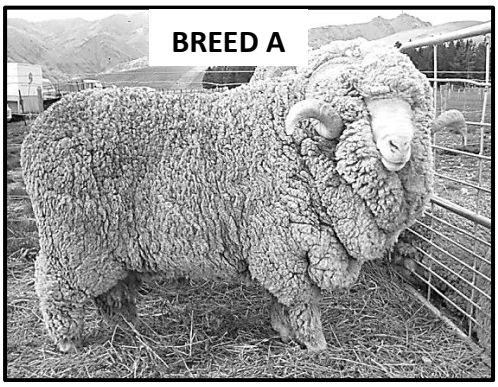
4.2.1 Identify the purpose of breed **A** and breed **B**. (2)

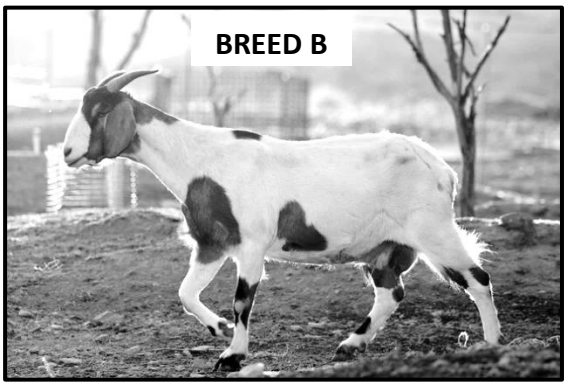
4.2.2 Give the name of breed **A**. (1)

4.2.3 Describe TWO characteristics of the breed in QUESTION 4.2.2. (2)

4.2.4 List TWO other cattle breed that is bred for the same purpose as breed **A**. (2)

4.3 The photos below represents two types of small stock in SA.





4.3.1 Identify from the photos above:

(a) Breed **A.** (1)

(b) Breed **B**. (1)

4.3.2 Indicate ONE characteristic of breed **A**. (1)

4.3.3 Give the purpose of breed **B**. (1)

4.3.4 Explain how breed **B** originated. (2)

4.3.5 Name the product that is produced by the Angora goat. (1)

4.4 Poultry is classified according to their production purposes.

4.4.1 Name the TWO types of production systems that is common in chicken production. (2)

4.4.2 Give ONE type of indigenous chicken breed. (1)

4.4.3 List FOUR requirements for successful poultry production. (4)

4.5 Game farming in South Africa

4.5.1 Give TWO reasons why elephants are endangered. (2)

4.5.2 Explain why rhinoceros are killed for their horns. (2)

4.5.3 List THREE reasons why game farming is important in S.A. (3)

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TOTAL SECTION B: 105
GRAND TOTAL: 150