education

Department:
Education
North West Provincial Government
REPUBLIC OF SOUTH AFRICA

PROVINCIAL ASSESSMENT

GRADE 10

AGRICULTURAL SCIENCES
JUNE 2024

MARKS: 100

TIME: 2 hours

This question paper consists of 11 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 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 numbers (1.1.1–1.1.10) in the ANSWER BOOK, e.g. 1.1.11 B.

    1.1.1   … is the direction that the slope faces that determines the amount of sunlight received in that particular area.

        A   East
        B   Aspect
        C   Altitude
        D   Climate

    1.1.2   All the living organisms in a particular area and their non-living environment.

        A   Ecosystem
        B   Individual
        C   Population
        D   Species

    1.1.3   The phase that occurs when the first plants invade overgrazed or bare soil.

        A   Climax phase
        B   Pioneer phase
        C   Sub-climax phase
        D   Primary phase

    1.1.4   Process by which plants release water vapour into the atmosphere.

        A   Condensation
        B   Transpiration
        C   Evaporation
        D   Sublimation

    1.1.5   The laws of a country, as determined by the law-making sector part of government, such as parliament:

        A   Green paper
        B   White paper
        C   Legislation
        D   Legal framework

1.1.6   One of the following statements about scientific knowledge is NOT correct:

    A   Knowledge of the present
    B   Stored in books
    C   Learnt by experience
    D   Economic sustainability

1.1.7   In an average year, South Africa is a net exporter of food. This is because South Africa …

    A   sells fishing nets to other countries.
    B   produces enough food for own needs and to sell to other countries.
    C   produces enough food to supply only our own needs.
    D   does not produce enough food and needs to buy from other countries.

1.1.8   The aim of land … is to give poor and disadvantaged people access to land.

    A   redistribution
    B   tenure
    C   restitution
    D   ownership

1.1.9   Broilers are kept for:

    A.   Mutton production
    B   Egg production
    C   Meat production
    D   Feather production

1.1.10   Identify which of the following does not fit with value adding in game farming:

    A   Eco tourism and nature conservation
    B   Agro Tourism
    C   Trophy Hunting
    D   Intensive production system   (10 x 1)   (10)

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 numbers (1.2.1–1.2.5) in the ANSWER BOOK, e.g. 1.2.6 B only.

COLUMN A			COLUMN B
1.2.1	A:	Male donkey	Parent of mule
	B:	Female horse	
1.2.2	A:	Indigenous breeds	Mainly originate from other countries and are imported
	B:	Improved breeds	
1.2.3	A:	State land	Land that belongs to a group or a tribe
	B:	Land tenure	
1.2.4	A:	Gazette	A change made to an Act
	B:	Amendment	
1.2.5	A:	Bos Indicus	They are adapted to cooler conditions of Europe
	B:	Bos Taurus	

(5 x 1) (5)

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

1.3.1 An area of land covered with plants that can be used by animals for grazing or browsing

1.3.2 All the productive activities associated with agriculture

1.3.3 The science of taking care of domestic animals

1.3.4 The largest and most dangerous African mammals to hunt

1.3.5 Feeding in which livestock prefer certain types of plants, plant parts to others (5 x 1) (5)

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 numbers (1.4.1 to 1.4.5) in the ANSWER BOOK.

    1.4.1 <u>Communal farming</u> has a high capital input for fencing different camps.

    1.4.2 Regularly changing the type of crop grown on a piece of land, is known as <u>intercropping.</u>

    1.4.3 Plants that are adapted to very dry habitats are called <u>hydrophytes</u>.

    1.4.4 With <u>intensive</u> production system animals are allowed to roam around freely.

    1.4.5 Food <u>security</u> is the changing of food from their natural state for safety and convenience. (5 x 1) (5)

TOTAL SECTION A: 25

SECTION B
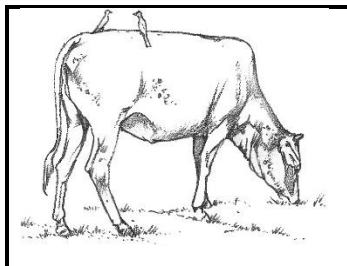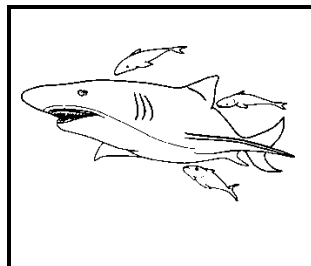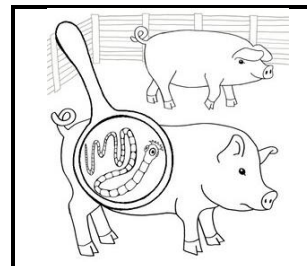
QUESTION 2: **AGRO-ECOLOGY**

Start this question on a NEW page.

2.1 The table below shows components of an ecosystem.

GROUP A	GROUP B
• Sunlight	• Snake
• Temperature	• Eagle
• Rainfall	• Grass
• Soil	• Grasshopper

2.1.1 Classify the components in **GROUP A** and **GROUP B** from the table above into biotic factors and abiotic factors. (2)

2.1.2 Explain the answers to QUESTION 2.1.1. (2)

2.1.3 Identify ONE climatic factor in the table above. (1)

2.1.4 Use the list of organisms in the table above to draw a food chain to show the FOUR trophic levels of energy flow in the ecosystem. (4)

2.2 The pictures below indicate interactions found in ecosystems.

A   **B**   **C**

2.2.1 Give a term that describes the interactions in **A, B** and **C.** (1)

2.2.2 Define the term in QUESTION 2.2.1. (2)

2.2.3 Identify the interactions in **A, B** and **C.** (3)

2.2.4 Give other TWO types of interactions NOT shown in the pictures above. (2)

2.2.5 Distinguish between intraspecific competition and interspecific competition. (2)

2.3 | The biome that can be described as dense, woody, semi-succulent and thorny vegetation with an average height of 2m to 3m.

2.3.1   Identify the name of South African biome in the scenario above.   (1)

2.3.2   Give any other THREE South African biomes not mentioned in the scenario above.   (3)

2.3.3   Give TWO reasons for the importance of the forest biome in agriculture.   (2)

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QUESTION 3: AGRI-INDUSTRY

Start this question on a NEW page.

3.1   The picture below shows food used in South Africa.

3.1.1   Classify the type of food depicted in the picture above.   (1)

3.1.2   Suggest a reason why the food mentioned in QUESTION 3.1.1 is mostly used by people.   (2)

3.1.3   State THREE other types of food not mentioned in QUESTION 3.1.1.   (3)

3.1.4   State THREE advantages of food processing.   (3)

3.2 | South Africa's land ownership reflects a stark legacy of dispossession, with white individuals holding most agricultural land while land reform struggles to bridge the gap. |

3.2.1   Deduce the type of land ownership or type of land tenure from the following statements:

(a)   The farmer rents a piece of land from the owner   (1)

(b)   The farmer from another country owns a land to grow livestock   (1)

(c)   A fenced natural forest and the people from community are not allowed to fetch wood from the forest   (1)

(d)   Farm workers are provided with a piece of land for settlement   (1)

3.2.2   Explain the difference between land redistribution and land tenure reform.   (2)

3.3   The table below indicates the population growth in South Africa from 2019 to 2023.

Years	Population growth (in millions)
2019	57
2020	58
2021	59
2022	60
2023	61

3.3.1   Define the term *population growth*.   (2)

3.3.2   Outline TWO negative effects of population growth on the agricultural sector.   (2)
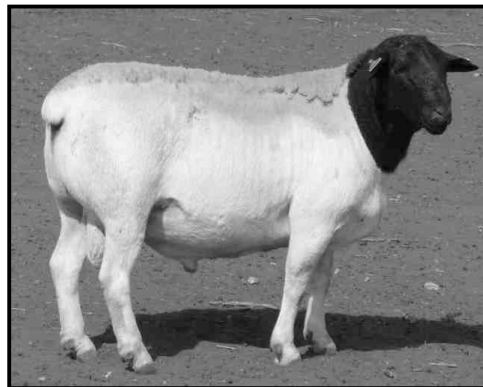
3.3.3   Plot a bar graph showing the population growth in South Africa from 2019 to 2023.   (6)

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QUESTION 4: ANIMAL STUDIES

Start this question on a NEW page.

4.1   The pictures below show sheep breeds.

A

B

C

D

4.1.1   Identify the individual breed for each specific characteristic. Write ONLY the letter.

    (a)   Pelt breeds   (1)

    (b)   Dual-purpose breeds   (1)

    (c)   Mutton breeds   (1)

    (d)   Wool breeds   (1)

4.1.2   Give the name of the breed developed from a cross between the Black Faced Persian and the Dorset Horn.   (1)

4.1.3   Tabulate THREE differences between mohair and wool fibres.   (6)

4.2 | Poultry breeds can be classified based on their utilisation or uses to the farmer and the consumer. |

4.2.1   Classify the following poultry breeds into broiler breed, egg-laying breed, show breed and dual-purpose breed:

(a)   Australop   (1)

(b)   Naked Neck   (1)

(c)   New Hampshire   (1)

(d)   Bantam   (1)

4.2.2   Name THREE basic requirements for successful production of chickens.   (3)

4.3   The picture below shows a pig breed on a farm.

4.3.1   Identify the name of the breed in the picture above.   (1)

4.3.2   Identify the gender of the breed in the picture above.   (1)

4.3.3   Justify your answer in QUESTION 4.3.2 with TWO reasons.   (2)

4.3.4   Provide THREE characteristics of the breed in QUESTION 4.3.1 above.   (3)

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TOTAL SECTION B: 75
GRAND TOTAL: 100