



LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF EDUCATION

**NATIONAL
SENIOR CERTIFICATE**

GRADE 11

**AGRICULTURAL SCIENCES
ASSIGNMENT
12 SEPTEMBER 2023**

MARKS: 50

DURATION: 1 HOUR

This question paper consists of 7 pages including the cover page

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. Supply the correct agricultural term/concept for each of the following descriptions:

1.1.1 The loss of water vapour by plants through the stomata of their leaves.

1.1.2 A manipulative measure to increase the rate of photosynthesis by exposing the leaves to sunlight.

1.1.3 Elements that are required in large quantities by plants.

1.1.4 The ploughing-in/back of a crop when it is still in an immature succulent stage.

1.1.5 The production of fruit without fertilization of the ovules, resulting in seedless fruit.

(5)

1.2. Change the underlined words in each of the following statements to make them TRUE. Write only the correct word(s) next to the question number.

1.2.1 The green pigment located in plant cell structures that absorbs sunlight during photosynthesis is chloroplasts

1.2.2 The primary mechanism of water movement in plants using capillary action and the inherent surface tension of water is called osmotic flow

1.2.3 Pollination is the falling off of already set fruitlets within ten days of their formation.

1.2.4 The part of the dicotyledonous flower that attaches the flower to the plant is the receptacle

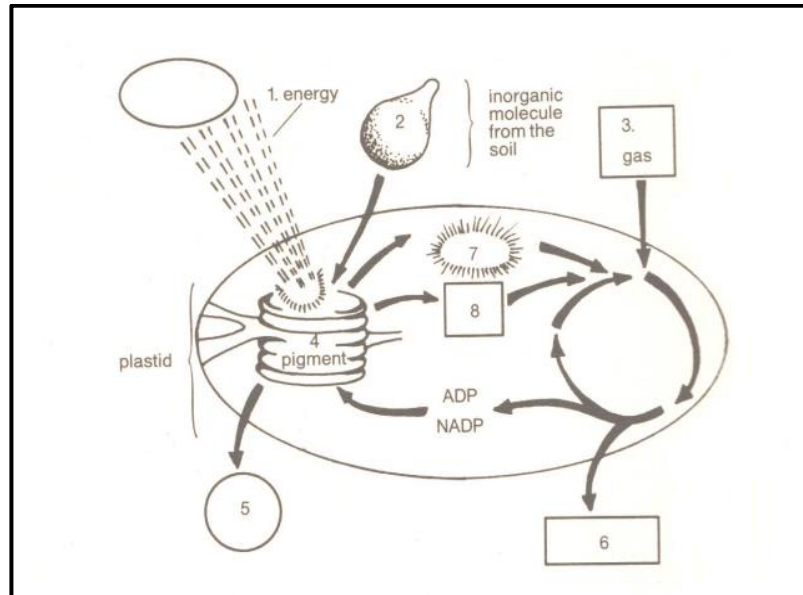
1.2.5 Cross pollination is the transfer of pollen grains from the anther to the stigma of the same flower or another flower on the same plant

(5)

TOTAL SECTION A: [10]

SECTION B**QUESTION 2: PLANT NUTRITION AND PHOTOSYNTHESIS**

2.1. The diagram below represents the process of photosynthesis



2.1.1 Name the requirements of photosynthesis labelled 1 – 4. (4)

2.1.2 Tabulate TWO differences between photosynthesis and respiration. (4)

2.2. There are various organs of food storage in plants. Indicate in each of the following cases the organ where food is stored.

2.2.1 Beetroot (1)

2.2.2 Sugar cane (1)

2.2.3 Spinach (1)

2.3. Plants show signs of a deficiency and/or toxicity if nutrient elements are not available in the required quantities in the soil.

2.3.1 Distinguish between deficiency symptoms and toxicity symptoms. (2)

2.3.2 Mention ONE toxicity symptom of nitrogen. (1)

[14]

QUESTION 3: FERTILIZERS AND FERTILIZING PRACTICES

3.1 The picture below represents a fertilizer mixture



3.1.1 Classify the fertilizer in the above picture. (1)

3.1.2 Calculate the percentage of Nitrogen (N) in the fertilizer mixture represented in the picture above. Show all calculations. (3)

3.2. Four Grade 11 learners conducted a research on the performance of different organic fertilizers on the yield of maize on two hectares of land. The results are as follows:

Manure	Yield in bags
Compost	35
Green manure	30
Farm manure	45
House hold heaps	25

3.2.1 Draw a bar graph to show the performance of the different organic fertilizers on the yield of maize. (6)

3.3

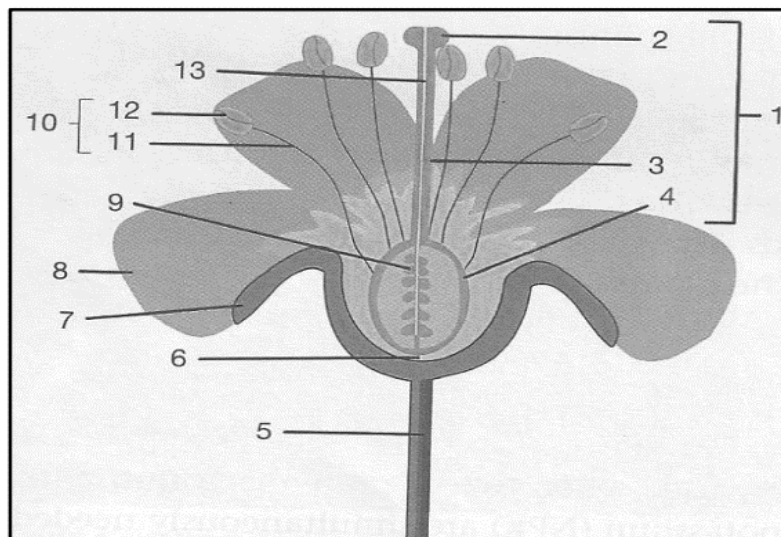
Fertilizers can be applied in different ways to plants. It is essential that fertilizers be applied in a manner that makes them available to plants and be prevented from damaging or burning the plants.

3.3.1 Discuss aerial application as a method of applying fertilizers to plants. (2)

3.3.2 Explain ONE disadvantage of the method discussed in Question 3.3.1 to the farmer. (1)

QUESTION 4: PLANT REPRODUCTION (SEXUAL)

4.1 The following diagram shows a certain type of flower.



4.1.1 Deduce if the above flower is monocotyledonous or dicotyledonous. (1)

4.1.2 Determine the collective name of the parts labelled:

a) 2, 3 and 4 (1)

b) 11 and 12 (1)

4.2 Give ONE function of the following labelled parts:

4.2.1 2 (1)

4.2.2 8 (1)

4.3 Depict from the diagram the part that will eventually develop into a fruit after fertilization. (1)

- 4.4 Tabulate TWO differences between monocotyledonous flowers and dicotyledonous flowers. (4)
- 4.5 Describe the concept of double fertilization in plants. (2)
- 4.6 Comment on why monocotyledonous flowers do not have brightly coloured petals. (1)

[13]**TOTAL SECTION B: 40**