



LIMPOPO

PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF EDUCATION

GRADE 11

AGRICULTURAL SCIENCES

2024 TERM 3 TEST

Date: 12 September 2024

MARKS: 100

TIME: 2 hours

This Question paper consists of 10 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 given 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 – 1.1.5) in the ANSWER BOOK, for example 1.2.6 C.

1.1.1 The green pigment that is essential for the process of photosynthesis, is called

- A chloroplast
- B chromatid
- C chlorophyll
- D chromoplast

1.1.2 The following should not be added to compost:

- A leaves
- B feathers
- C worms
- D meat

1.1.3 An abnormal plant condition resulting from the reduction or loss of the green pigment resulting in pale green, yellow or whitish color in leaves.

- A Chlorosis.
- B Dehydration.
- C Hydrolysis.
- D Chromatosis.

1.1.4 Nitrogen is absorbed by plants in the form of

- A urea
- B nitrites
- C salts
- D nitrates

1.1.5 Artificial supply of water to areas where there is not sufficient rainfall:

- A Evaporation
- B Irrigation
- C Drainage
- D Transpiration

(5 x 2 = 10)

1.2 Choose a sentence/phrase from COLUMN B that best matches a term/concept in COLUMN A. Write only the letter (A-H) next to the question numbers (1.2.1 – 1.2.5) in the ANSWER BOOK, for example 1.2.6 K.

	COLUMN A		COLUMN B
1.2.1	Calcium sulfate	A	Leaf chlorosis
1.2.2	Zinc	B	Hill reaction
1.2.3	Sulfur	C	Leaves turn purple
1.2.4	Phloem	D	Transport water and dissolved nutrients from roots to leaves.
1.2.5	Light phase of photosynthesis	E	Agricultural lime
		F	Gypsum
		G	Leaves turn yellow, something that starts at the veins of the leaf.
		H	Nutrients are transported from leaves to other parts of the plants.

(5 x 2 = 10)

1.3. Give ONE word /term /phrase for each description and write it next to the question numbers (1.3.1 – 1.3.5) in the ANSWER BOOK

1.3.1 Male part of a flower.

1.3.2 The part of the flower that attracts insects.

1.3.3 Fertiliser should be applied to one or both sides of a row of plants or under seed.

1.3.4 Transfer of ripe pollen grains from stamens to stigmas.

1.3.5 The upward pulling force that helps to move water from the roots upwards to the leaves.

(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 numbers(1.4.1- 1.4.5) in the ANSWER BOOK

1.4.1 The plowing of a crop into the ground while it is still green, juicy and full in the flowering stage is called compost.

1.4.2 Micro elements are less available in acidic soil.

1.4.3 Flowers that produce seeds that have two cotyledons are called monocots.

1.4.4 Plants that have male and female flowers or reproductive organs on the same plant is called unisexual.

1.4.5 Fruit set is the process where an organism grows from a seed.

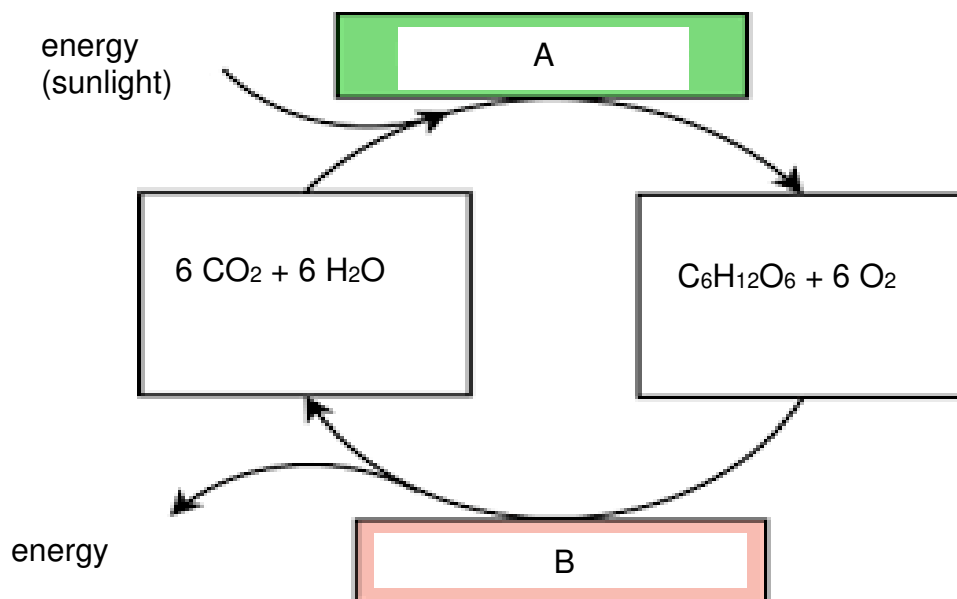
(5x1)= (5)

SECTION A= [35]

SECTION B**QUESTION 2 PHOTOSYNTHESIS**

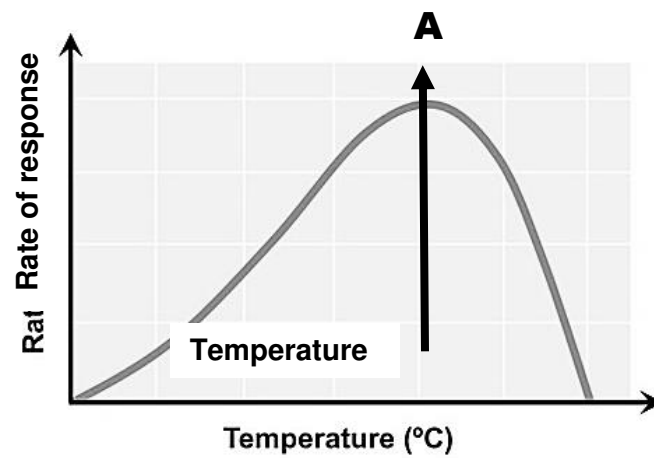
Start this question on a NEW page

2.1 Study the following diagram and answer the questions that follow:



- 2.1.1 Name processes A and B as shown in the diagram above. (2)
- 2.1.2 Name the organelle in which the above process **A** occurs. (1)
- 2.1.3 State FOUR requirements for process **A**. (4)
- 2.1.4 Tabulate TWO differences between process **A** and process **B**. (4)
- 2.1.5 The product of process A is stored in the form of starch. (2)
- a) Name any TWO parts of the plant where the starch is stored. (2)
- b) Give ONE example of each of the above parts that is used for storage. (2)

2.2. The graph below shows that temperature affects the rate of photosynthesis.



- 2.2.1 Explain why the rate of photosynthesis decreases as the temperature passes point A. (2)
- 2.2.2 Name any TWO other factors that can also influence the rate of photosynthesis. (2)
- 2.2.3 Name the FOUR methods used to manipulate plants to increase photosynthesis. (4)

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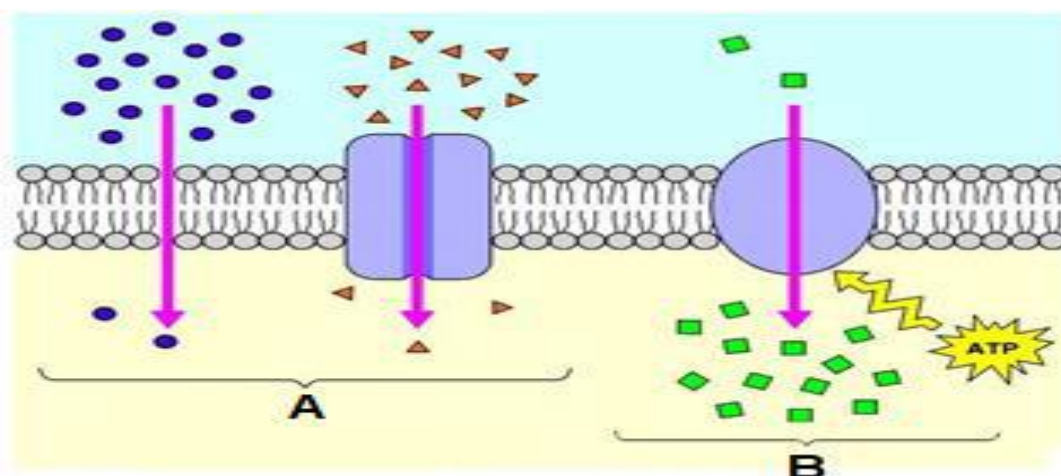
QUESTION 3 INORGANIC AND ORGANIC FERTILIZERS.

Start this question on a NEW page

3.1 Study the information below and answer the questions that follow.

A decrease in hydrostatic pressure in the upper parts of the plant, due to diffusion of water from the stomata to the atmosphere, means that water can move from the roots to the stem and leaves of the plant. The processes that allows water to move from the roots to the stems and leaves includes osmotic flow, root pressure and transpiration pull.

- 3.1.1 Identify TWO pressures in plants, from the scenario above, that allows movement of water from the roots to stems and leaves. (2)
- 3.1.2 Differentiate between osmotic flow and transpiration pull in plants. (4)
- 3.1.3 Name the part of the plant modified for the diffusion of water into the atmosphere (1)
- 3.1.4 Give THREE functions of water in plants. (3)
- 3.1.5 The diagram below shows transport mechanisms in cells.



- a) Identify the transport mechanisms A and B in the diagram above. (2)
- b) Give the reason for your answer to QUESTION 3.1.5 (a) above. (2)

3.1.6 The table below shows some minerals nutrients for plants.

MINERAL	DIFFICIENCY SYMPTOM	MICRO / MACRO
A	Older leaves has a purple colour	Macro
B	Leave tips are brown and necrotic	Macro
Molybdenum	Slow growth	C
Nitrogen	D	Macro

- a) Provide the labels A–D to complete the table. (4)
- b) Suggest TWO methods that farmers can use to determine the nutrient status of their lands. (2)

3.1.7 Name TWO factors that affect the availability of nutrients to plants, in the table above. (2)

2. Study the following examples of **inorganic fertilizers**. Answer the questions that follow:



A



B

The grass in your garden's root formation is very weak. The cooperative offers both 7 : 1 : 3 (17) and 8 : 1 : 5 (17) on a special offer.

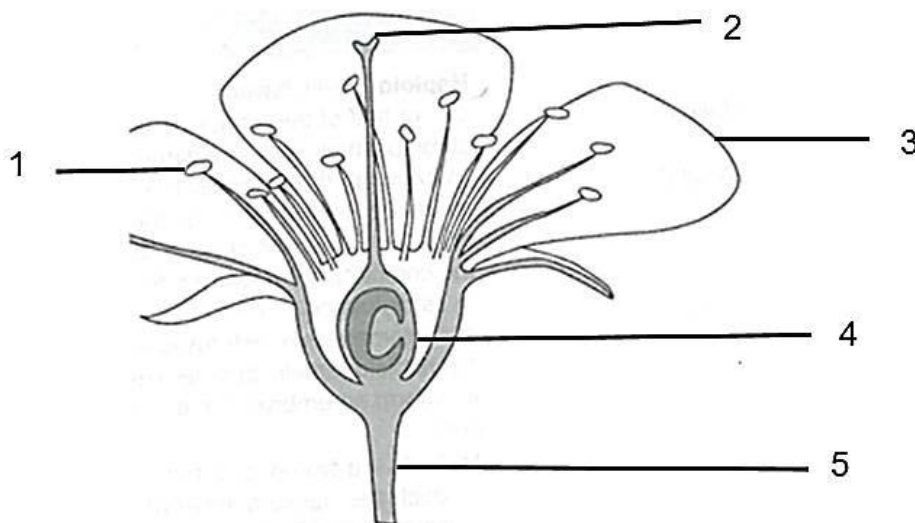
- 3.2.1 Name the THREE macro elements that occur in both types of fertiliser. (3)
- 3.2.2 What is the percentage of macronutrients that bag B contains? (1)
- 3.2.3 Name the macro element that promotes root formation. (1)

- 3.2.4 Prove which bag (A or B) has the most of the macro element which promotes **root formation**. Show all calculations. (5)
3. Organic fertilizers have many benefits for agriculture.
- 3.3.1 Name any TWO examples of organic fertilizers. (2)
- 3.3.2 Explain why it is not necessary to add extra nitrogen to the fields where soybeans are planted. (3)
- [37]**

QUESTION 4 PLANT REPRODUCTION

Start this question on a NEW page

- 4.1 The diagram below represents a flower. Answer the questions which is based on it.



- 4.1.1 Name the parts numbered 1 to 5. (5)
- [5]**

SECTION B [65]
GRAND TOTAL [100]