



GAUTENG PROVINCE

EDUCATION
REPUBLIC OF SOUTH AFRICA

GAUTENG DEPARTMENT OF EDUCATION

**LIFE SCIENCES
BASELINE TEST
JANUARY 2025**

QUESTION PAPER

GRADE : 10

TIME : 30 MINUTES

MARKS : 30

NUMBER OF PAGES : 5

INSTRUCTIONS AND INFORMATION

Read the following instructions carefully before answering the questions.

1. Answer ALL the questions.
2. Write ALL the answers in your ANSWER BOOK.
3. Start the answers to each question at the top of a NEW page.
4. Number the answers correctly according to the numbering system used in this question paper.
5. Present your answers according to the instructions of each question.
6. ALL drawings should be done in pencil and labelled in blue or black ink.
7. Draw diagrams or flow charts only when asked to do so.
8. The diagrams in this question paper are NOT necessarily drawn to scale.
9. Do NOT use graph paper.
10. You must use a non-programmable calculator, protractor and a compass.
11. Write neatly and legibly.

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 to D) next to the question number (1.1.1 to 1.1.2) in your ANSWER BOOK, for example 1.3 D.

1.1 Which of the following organelles gives colour to flowers?

- A Leucoplasts
- B Chromoplasts
- C Chloroplasts
- D Mitochondria

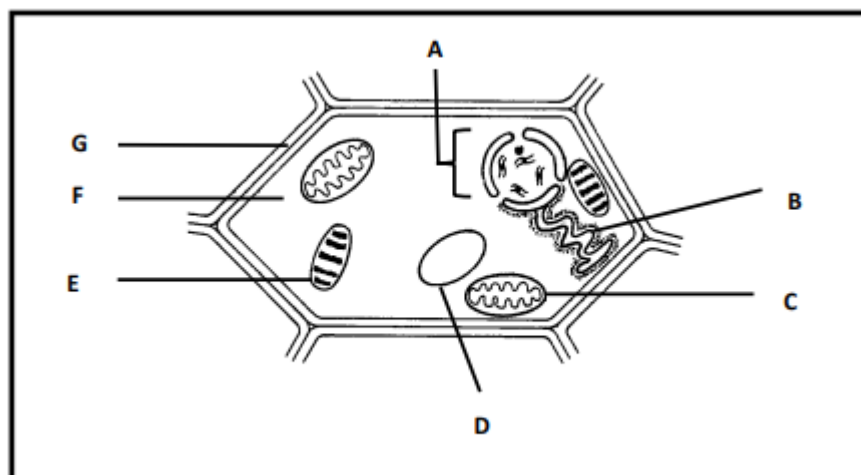
1.2 If the magnification power of the microscope is 600x and the magnification of the eyepiece is 10x, then the magnification of the objective lens must be:

- A 6x
- B 0.6x
- C 6000x
- D 60x

2 x 2 **(4)**

Question 2

Study the diagram of a cell shown below and answer the questions that follow.



2.1 Name the parts labelled

- a) **D**
- b) **F**

(2)

2.2 Provide the LETTER and NAME of the part that:

- a) Is responsible for photosynthesis
- b) Produces energy in the form of ATP

(2)

(2)

(6)

QUESTION 3

The table below shows the results of an investigation in which the effect of temperature and light on the yield of tomatoes in two greenhouses on a farm was investigated.

TEMPERATURE (°C)	AVERAGE YIELD OF TOMATOES PER PLANT (kg)	
	LOW LIGHT LEVELS	HIGH LIGHT LEVELS
5	0,5	0,5
10	1,5	2,5
15	3,0	5,0
20	3,6	8,5
25	3,5	7,8
30	2,5	6,2

- 3.1 State TWO steps the investigator may have taken into consideration during the planning stage of the investigation. (2)
- 3.2 Identify the:
a) Independent variables (2)
b) Dependent variable (1)
- 3.3 Plot a line graph showing the results of the average yield of the tomatoes from 5°C to 30°C for low light levels. (6)
- 3.4 State ONE way in which the scientists could have improved the reliability of the investigation. (1)
- 3.5 Calculate the percentage increase of the average yield in tomatoes from 10 °C to 20 °C for high light levels. Show all calculations. (3)
- (15)**

QUESTION 4

The root of an onion is a rapidly growing part of an onion. Many cells will be in different stages of mitosis. A sample of an onion tip was stained and studied under a microscope. Various phases of mitosis were identified in the table below.

	Number of cells counted in 3 different slides			
	Slide 1	Slide 2	Slide 3	Total
Interphase	47	49	58	154
Prophase	5	7	18	30
Metaphase	2	4	1	7
Anaphase	10	10	2	22
Telophase	4	4	4	12

- 4.1 State the phase which produces the:
- a) Highest number of cells (1)
 - b) Lowest number of cells (1)
- 4.2 Calculate the percentage of cells produced during prophase. Show ALL calculations. (3)
(5)

GRAND TOTAL : 30