

**SIR ARTHUR LEWIS COMMUNITY COLLEGE
DIVISION OF AGRICULTURE**

CERTIFICATE IN GENERAL AGRICULTURE

END OF SEMESTER ONE EXAMINATION

COURSE: PLANT STUDIES -PLS101

DATE: 18th DECEMBER 2017

DURATION: 2 ½ HOURS.

TIME: 9:00 a.m.

ANSWER ALL QUESTIONS.

1. The cell is the basic unit of life.

- (a) On the diagram of a cell provided, name the parts labeled 1 – 10 and state the function of each. **(10 marks)**
- (b) State **TWO (2)** differences between a plant cell and an animal cell. **(2 marks)**
- (c) Explain with the use of diagrams the stages of the cell cycle. **(8 marks)**

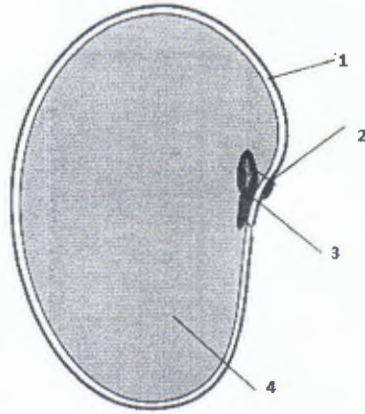
2. The leaf is the main photosynthetic organ of the plant.

- (a) State **THREE (3)** features of a typical leaf that help it to carry out Photosynthesis. **(5 marks)**
- (b) Complete the table below. **(6 marks)**

	Photosynthesis	Respiration
Cellular structure where it occurs		
Balanced equations		

- (c) (i) Explain the light and dark reaction processes in photosynthesis **(4 marks)**
 - (ii) State how **ANY TWO (2)** environmental factors may affect the rate of respiration in plants. **(5 marks)**
3. The flower is the reproductive organ of the plant.
- a) On the diagram of a flower provided, name the parts labeled 1 - 8. **(8 marks)**
 - (b) Differentiate between the terms **pollination** and **fertilization**. **(2 marks)**

- (c) On the diagram of a seed provided, name the parts 1 - 4. (4 marks)



- d.) State the significance of oxygen, temperature and water in the process of germination. (6 marks)
4. Plants absorb water and minerals from soils.
- (b) Differentiate between the following terms:
- i) Gravitational water and Hygroscopic water
 - ii) Permanent wilting point and field capacity.
 - iii) Macro and micro nutrients. (6 marks)
- (b) Explain the mechanism of “transpiration pull”. (3 marks)
- (c) State **ONE** (1) function of **ANY FOUR** (4) elements used by the plant. (8 marks)
- (d) A farm worker erroneously applied **abscisic acid** to tomato seedlings. Explain a possible effect this may have on the seedling growth. (3 marks)
5. Taxonomists study many different types of species.
- (a) Define the term taxonomy. (1 mark)
- (b) State **TWO** (2) reasons why taxonomy is essential in plant science. (4 marks)
- (c) Name the five (5) major divisions of the plant kingdom. (5 marks)
- (d) List the common name and scientific name of **ANY FOUR** (4) plants. (4 marks)
- (e) State three differences between dicots and monocots in reference to the following:
- I. Types of root system
 - II. Leaf venation
 - III. Number of cotyledons in its seeds. (6 marks)

Typical Plant Cell

