

# TEACHERS WITHOUT BORDERS PROGRAMME

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**basic education**  
Department:  
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In Bill Gates words, at the Mandela Day 'Living Together' address: "Maintaining the quality of this country's higher education system while expanding access to more students will not be easy. But it's critical to South Africa's future" – working together, we can help achieve this."

## Contributing schools to date:

Clifton School	Milnerton High	Rustenburg Girls' High	St Peter's
Durban Girls'	Northwood High	St Anne's DC	St Stithians
Fairmont High	Roedean	St John's DSG	Wynberg Boys' High
Herzlia High	Rondebosch Boys'	St Mary's DSG Kloof	Wynberg Secondary



RUSTENBURG HIGH SCHOOL FOR GIRLS

Time: 45 mins  
Grade 8 Test  
EXAMINER: R. Goble

Marks: 40  
February 2017  
MODERATORS: G. Reggiori, T. Henry,  
S. Viljoen, Z. Rabeh, L. Gardiner

**Instructions:**

1. Write in blue or black ink.
2. Pencil is only to be used for drawings and graphs.
3. Mistakes are to be neatly crossed out with a ruler and the question continued on the next line.  
No tippex may be used.
4. Write neatly and legibly.
5. Number all questions as numbered on the question paper.

**SECTION A**

**QUESTION ONE: MULTIPLE CHOICE**

Four options are provided as possible answers to the following questions. Each question has only ONE correct answer. Write only the letter (A-D) next to the question number (1.1-1.3) on your answer page.

- 1.1 Which of the following is NOT a requirement for the process of photosynthesis to take place?
- A Water  
B Carbon dioxide  
C Sunlight  
D Oxygen
- (2)
- 1.2 When performing the test for the presence of starch, a positive result is indicated by the following colour change after adding iodine solution:
- A Blue-black  
B Brown  
C Blue  
D Black
- (2)
- 1.3 Cellular respiration can be summarized by which following word equation?
- A Carbon dioxide + glucose → oxygen + energy + water  
B Oxygen + glucose → carbon dioxide + energy + water  
C Carbon dioxide + oxygen → glucose + energy + water  
D Carbon dioxide + oxygen + glucose → energy + water
- (2)

## QUESTION TWO

Give ONE word/term for each of the following descriptions. Write only the word/term next to the question number (2.1-2.4) on your answer page.

- 2.1 The green pigment found in plants. (1)
  - 2.2 The place in a cell where cellular respiration takes place. (1)
  - 2.3 The type of energy that is stored in food. (1)
  - 2.4 Organisms that regulate their body temperature from within. (1)
- [4]**

## QUESTION THREE

Choose the term from COLUMN B that matches the description in COLUMN A. Write **only** the letter (A – G) next to the question number (3.1 – 3.5) on your answer page.

Column A		Column B	
3.1	The process by which plants make simple sugars	A	Autotrophs
3.2	Organisms that need to eat to survive.	B	Cellular respiration
3.3	A by-product of photosynthesis.	C	Heterotrophs
3.4	Organisms that are able to make their own food.	D	Glucose
3.5	The process in plants where simple sugars are converted into energy.	E	Photosynthesis
		F	Oxygen
		G	Carbon dioxide

**[5]**

**SECTION A SUBTOTAL: 15**

## SECTION B

### QUESTION FOUR

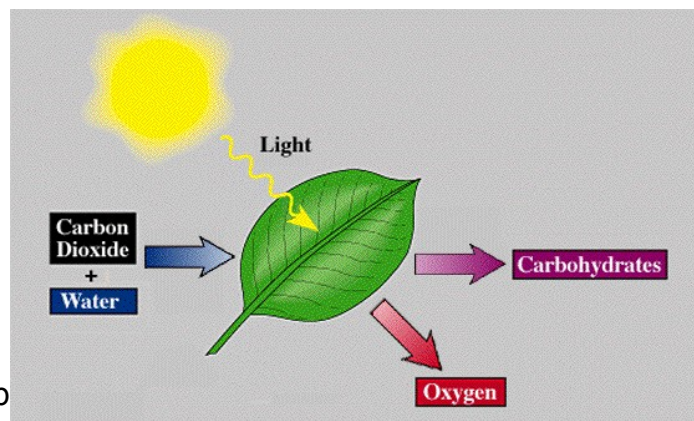
Below is an example of an interaction between 2 species in the wild.



- 4.1 What type of interaction is shown in the picture on the previous page? (1)
- 4.2 Explain the interaction. Include in your answer, how each party is affected and what drives this interaction. (3)
- [4]

## QUESTION FIVE

The process of photosynthesis is shown below.



- 5.1 Using the above process of photosynthesis. (3)
- 5.2.1 Photosynthesis produces glucose. **Name** three substances that glucose is converted into in a plant. (3)
- 5.2.2 Give the function of each substance in 5.2.1. (3)
- [9]

## QUESTION SIX

Melanie wants to determine the gaseous product of cellular respiration. She blew through a straw into **clear** limewater.



- 6.1 What does Melanie observe? (1)
- 6.2 Give a reason for your answer in 6.1. (1)

Below are the results of an investigation into how glucose concentration affects the rate of cellular respiration. The rate of cellular respiration was measured by measuring the amount of gas produced as shown below. The picture shows how some of the experimental apparatus was set up.



Amount of glucose added (ml)	Circumference of balloon (cm)
0	5
1	8
2	12
5	19
10	22

6.3 Write down the following for this investigation:

6.3. The independent variable. (1)

1

6.3. The dependent variable. (1)

2

6.3. An hypothesis. (1)

3

6.4 Using the data above, plot a line graph. (7)

[12]

**SECTION B SUBTOTAL: 25**

**GRAND TOTAL 40 MARKS**