



BOTSWANA EXAMINATIONS COUNCIL
Botswana General Certificate of Secondary Education

CANDIDATE
NAME

CENTRE
NUMBER

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CANDIDATE
NUMBER

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BIOLOGY

0572/03

Paper 3

October/November 2016

1 hour 15 minutes

Additional Materials: Answer Paper

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name in the spaces provided at the top of this page.
DO NOT WRITE IN ANY BARCODES.

Section A

Answer **all** questions.

Write your answers in the spaces provided on the question paper.

Section B

Answer **both** questions.

Write your answers on the separate answer paper provided.

Write your Centre number, candidate number and name on each sheet of answer paper you use.

At the end of the examination fasten all sheets of answer paper to this question paper using the string provided.

You may use a calculator.

Do not use staples, paper clips, highlighters, glue or correction fluid.

The number of marks is given in brackets [] at the end of each question or part question.

You are advised to spend no longer than 40 minutes on Section A.

For Examiner's Use	
Section A	
Section B	
6	
7	
TOTAL	

This document consists of 7 printed pages and 1 blank page.



Section A

Answer **all** questions in this section in the spaces provided.

- 1 Fig. 1.1 is a diagram of a plant cell showing structures **J**, **K**, and **L** as seen under a high power microscope.

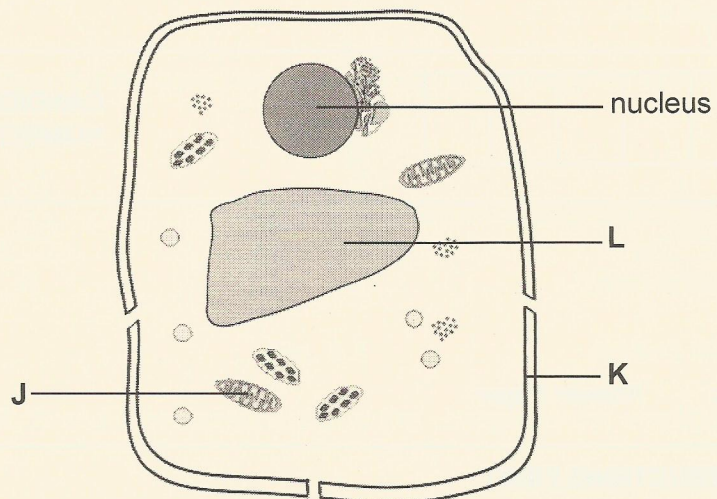


Fig. 1.1

- (a) Identify structures **J**, **K** and **L** and state their functions by completing Table 1.1. Identification of **K** and function of **L** have been done for you.

Table 1.1

structure	name	function
J		
K	cell membrane	
L		controls cell turgidity

[4]

- (b) Describe the relationship between the functions of the nucleus and ribosomes.

.....

.....

.....[2]

[Total: 6]

2 Fig. 2.1 is a graph showing the effect of carbon dioxide concentration on the rate of photosynthesis.

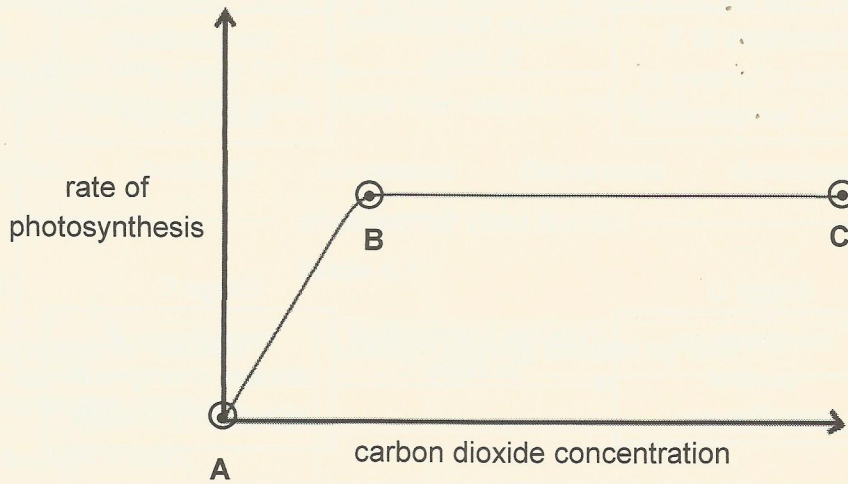


Fig. 2.1

(a) Describe and explain the shape of the graph from point:

(i) A to B
.....
.....
.....
.....
.....[3]

(ii) B to C
.....
.....
.....
.....[2]

(b) Light energy is converted by chlorophyll into a form that plant cells can use.

State the form into which light energy is converted.

.....[1]

[Total: 6]



3 Fig. 3.1 represents stages A, B, C and D that are involved in temperature regulation in humans.

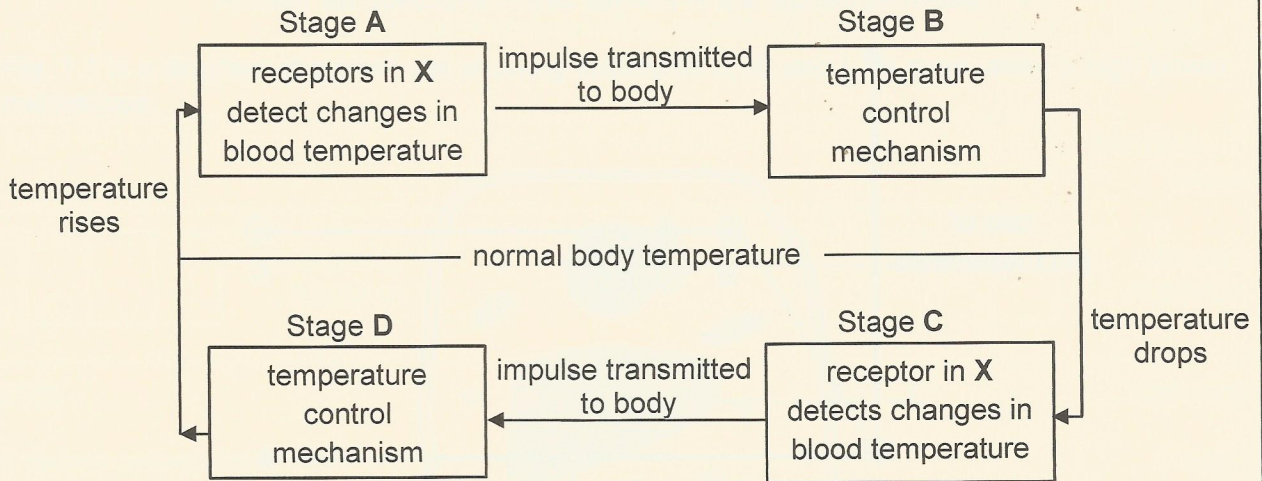


Fig. 3.1

(a) State **one** temperature control mechanism in stage **B** and **two** in stage **D**.

(i) Stage B: [1]

(ii) Stage D: 1

2 [2]

(b) Identify structure **X** in Fig. 3.1.

X [1]

(c) State the role played by receptors in the skin in temperature regulation.

..... [1]

(d) Explain how negative feedback is involved in the control of blood glucose concentration.

.....

 [5]

[Total: 10]

Section B

Answer **both** questions.

Write your answers on the separate answer paper provided.

- 6 (a) Describe and explain the likely effect of throwing grass and other weeds into the water in a village dam. [6]
- (b) Describe how nitrogen in the atmosphere becomes part of animal tissue. [9]

[Total: 15]

- 7 Discuss the role of micro-organisms in production of:

- (a) madila (sour milk) [4]
- (b) single cell protein [3]
- (c) biogas and [3]
- (d) pest resistant crop plant. [5]

[Total: 15]

