Surname	Forename(s)	Centre Number	Candidate Number

ZIMBABWE SCHOOL EXAMINATIONS COUNCIL

General Certificate of Education Ordinary Level

BIOLOGY 4025/2

PAPER 2 Theory

NOVEMBER 2018 SESSION 2 hours

Candidates answer on the question paper
Additional materials: Electronic calculator
Pencil (type HB is recommended)

Allow candidates 5 minutes to count pages before the examination.

This booklet should not be punched or stapled and pages should not be removed.

TIME 2 hours

INSTRUCTIONS TO CANDIDATES

Write your name, centre number and candidate number in the spaces at the top of this page and your centre number and candidate number on the top right hand corner of every page of this paper.

Check that all the pages are in the booklet and ask the invigilator for a replacement if there are duplicate or missing pages.

Section A
Answer **all** questions.
Write your answers in the spaces provided on the question paper.

Section B
Answer any **four** questions.
Write your answers in the spaces provided on the question paper.

INFORMATION FOR CANDIDATES

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

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Section A

*Answer **all** questions in this section.*

1 **(a)** **Fig.1.1** shows a group of specialised cells.

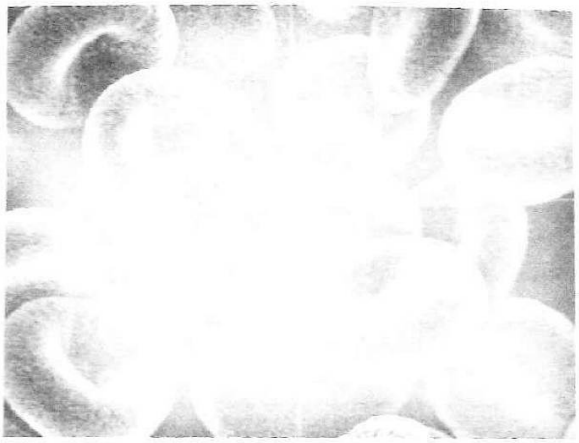


Fig. 1.1

(i) Identify the specialised cells in **Fig.1.1**.

_____ [1]

(ii) State any **three** ways in which these cells are specialised for their function.

1. _____

2. _____

3. _____ [3]

1 (b) (i) State any **three** factors that influence the rate of photosynthesis.

1. _____

2. _____

3. _____ [3]

(ii) Explain the importance of photosynthesis in a natural ecosystem.

_____

_____

_____ [3]

[Total:10]

2 **Fig. 2.1** shows a section through a human tooth.

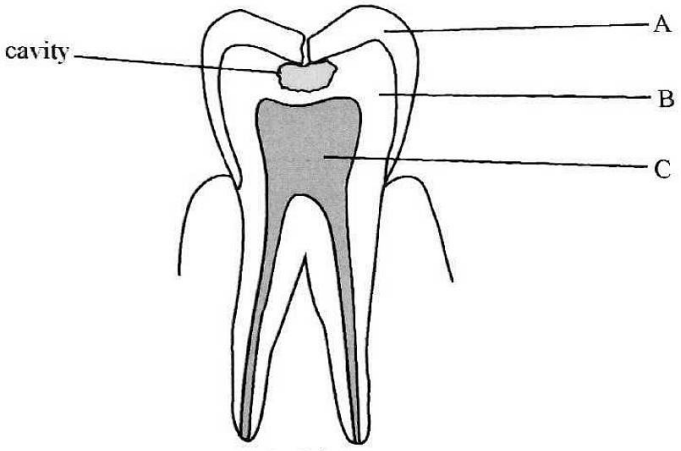


Fig.2.1

(a) (i) Name the parts labelled A, B and C.

A _____

B _____

C _____ [3]

2 **(a)** **(ii)** *Identify the type of tooth shown in* **Fig.2.1**.

_____ [1]

(b) **(i)** State the function of this tooth.

_____ [1]

(ii) Describe any **two** structural adaptations of this tooth to its function.

adaptation 1 _____

_____

adaptation 2 _____

_____ [2]

(c) Explain the formation of the cavity.

_____

_____

_____

_____

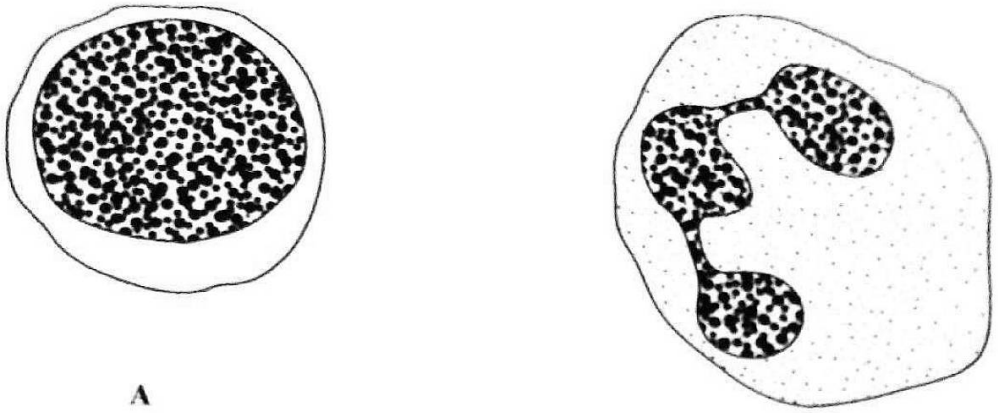
_____

_____

_____ [3]

[Total: 10]

3 **Fig.3.1** shows **two** types of white-blood cells, **A** and **B**.



A **B**

Fig.3.1

(a) Identify the cells **A** and **B**.

A _____

B _____ [2]

(b) State **three** visible differences in structure between cells **A** and **B**.

1. _____

2. _____

3. _____ [3]

(c) Describe the functions of the:

1. blood plasma _____

_____

_____

2. platelets _____

_____

_____ [4]

(d) Name **any** substance that is found in blood plasma and not in tissue fluid.

_____ [1]

[Total 10]

(a) State the functions of the following parts of a joint

ligament _____

cartilage _____

tendon _____ [3]

(b) Name **one** type of joint and describe the type of movement it allows.

_____

_____

_____ [2]

(c) Outline the functions of the skeleton.

_____

_____

_____

_____

_____ [5]

[Total:10]

5 (a) (i) Define *malnutrition*.

_____

_____

_____ [2]

(ii) Describe the symptoms of:

1. kwashiokor _____

_____

_____

_____

2. scurvy _____

_____

_____

_____ [4]

(b) **Fig.5.1** shows a malnutritional disorder.

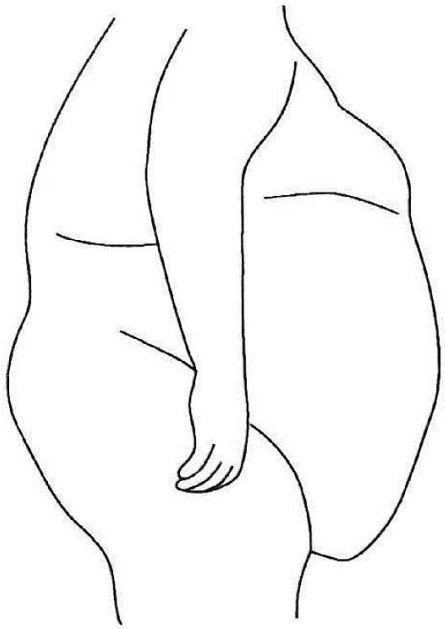


Fig.5.1

(i) Identify this disorder.

_____ [1]

(ii) Explain why a person with this disorder is likely to suffer from Coronary Heart Disease.

_____

_____

_____

_____

_____ [3]

[Total:10]

6 **(a)** Explain the term *variation*

_____

_____

_____ [2]

(b) Identify the **two** types of variation giving an example of a human feature in each case.

type 1: _____

example: _____

type 2: _____

example: _____ [4]

(c) Sketch graphs that would be produced for features mentioned in **(b)**.

[4]

[Total:10]

Section B

*Answer any **four** questions from this section.*

7 **(a)** State and explain any **three** properties of enzymes. 8

1. _____

_____

_____

2. _____

_____

_____

3. _____

_____

_____ [6]

(b) Explain the importance of enzymes to living organisms.

_____

_____

_____

_____

_____

_____ [4]

[Total:10]

8 (a) Explain why a maize plant is classified as a monocotyledonous plant.

[4]

(b) Describe how plants that grow in arid areas are adapted to minimize water loss.

[6]
[Total:10]

(a) Outline the functions of blood.

10

[6]

(b) Explain the structural adaptations of arteries to their function.

[4]
[Total:10]

10 (a) Explain the effects of nitrates that are released from agricultural activities.

[6]

(b) Describe the measures taken by a farmer to restore lost nitrates.

[4]

[Total:10]

11 **Fig.11.1** shows a longitudinal section of a flower.

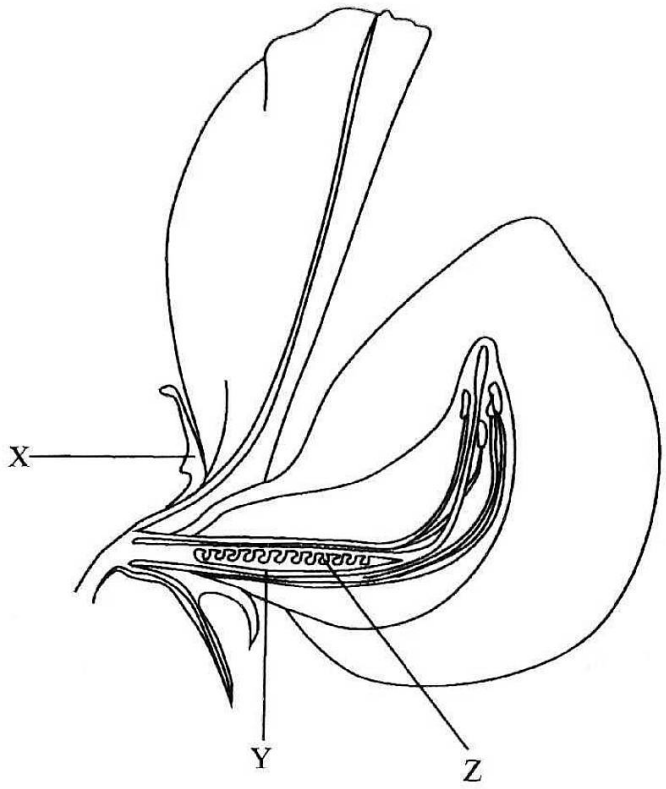


Fig.11.1

(a) Describe the changes which occur to parts X, Y and Z after fertilization.

[6]

11 (b) Explain the mechanisms adapted by flowers to promote insect pollination.

[4]
[Total:10]

12 **Fig.12.1** illustrates a reflex arc causing the movement of the human hand away from a hot object.

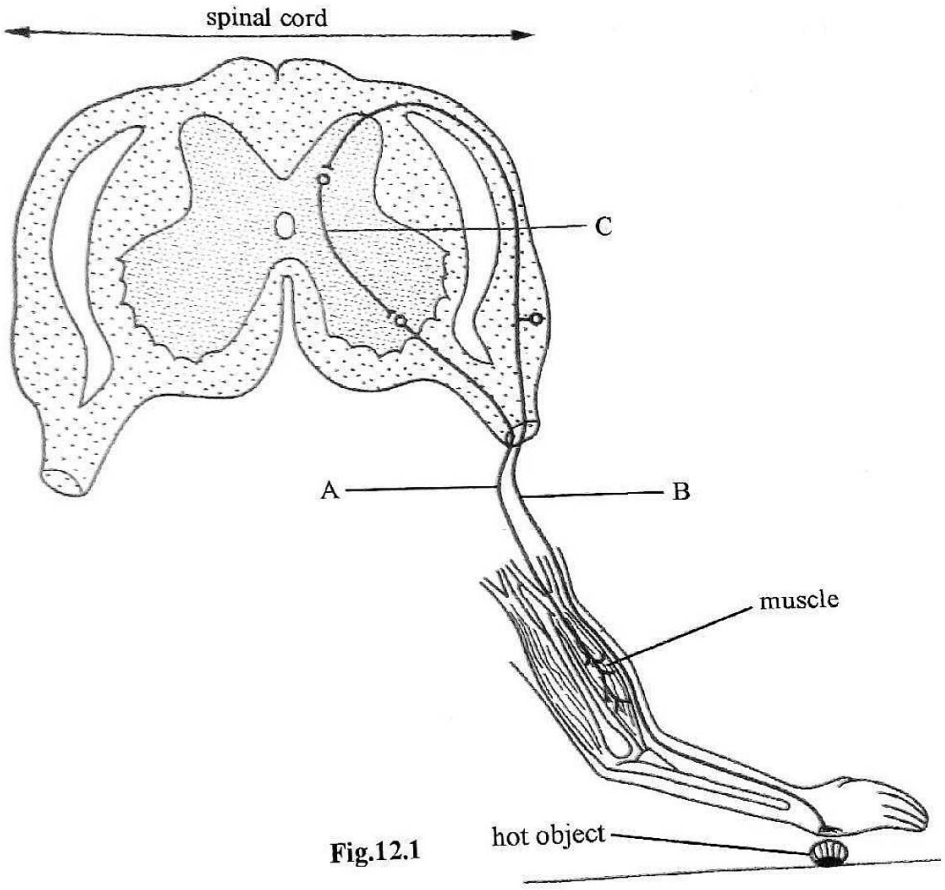


Fig.12.1

2 (a) Describe with reference to the parts labelled A, B, and C the actions taken to remove the hand from the hot object.

[6]

(b) Distinguish between the endocrine and the nervous system in the transmission of messages in the human body.

[4]

[Total:10]