Candidate Name | Centre Number | Candidate Number

ZIMBABWE SCHOOL EXAMINATIONS COUNCIL

General Certificate of Education Ordinary Level

4025/2

BIOLOGY

PAPER 2 Theory

2 hours

JUNE 2019 SESSION

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.
Write your centre number and candidate number in the box on the top right 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.

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

INFORMATION FOR CANDIDATES

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

©ZIMSEC J2019

Copyright: Zimbabwe School Examinations Council, J2019.

Turn over

Section A

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

1 **(a)** State any **two** science laboratory rules.

1 .....

.....

2 .....

..... [2]

(b) Give any **two** possible causes of accidents in a science laboratory.

1 .....

2 ..... [2]

(c) Describe how a sand bucket is used to control fires in a science laboratory.

.....

..... [2]

(d) Suggest any **four** ways of taking good care of a microscope.

1 .....

2 .....

3 .....

4 ..... [4]

2. (a) Complete **Table 2.1** by naming the organelles.

Table 2.1

function	organelle
controls the activities of a cell	
site for aerobic respiration in a cell	
controls entry and exit of substances in a cell	
helps to maintain pressure within a cell	

[4]

(b) Explain why

(i) the sperm cell contains large amounts of mitochondria,

.....

..... [2]

(ii) red blood cells lack nuclei.

.....

..... [2]

(c) State any **two** differences between a plant cell and an animal cell.

1 .....

2 .....

..... [2]

3. (a) (i) Write word equations to show the action of enzymes on

fat, ...

.....

protein. .....

..... [4]

(ii) Explain the use of enzymes in biological washing powders.

.....

..... [2]

(iii) Suggest, with a reason, the effect of using cold water on stain removal capacity of biological washing powders.

effect .....

reason ..... [2]

(b) Explain the effects of denaturation on enzyme activity.

.....

.....

.....

..... [2]

4. (a) **Table 4.1** shows incomplete information on the parts of an ear and their functions.

Complete **Table 4.1**.

Table 4.1

part of an ear	function
pinna	
	secretes wax to trap dust and pathogens.
semi circular canal	
	enabling hearing

[4]

(b) State any **three** possible causes of deafness.

.....

.....

..... [3]

(c) Explain why it is **not** advisable to listen to very loud music through earphones.

.....

.....

..... [3]

5 (a) (i) **Fig. 5.1 (a) and Fig. 5.1 (b)** show variation in two human characteristics.

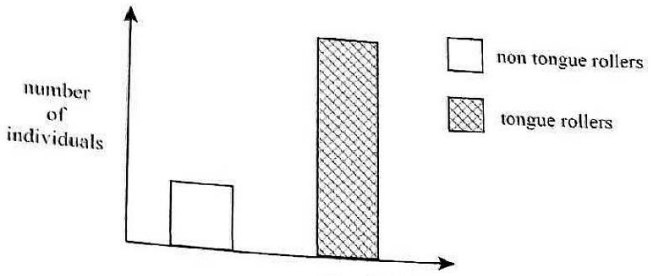


Fig. 5.1(a)

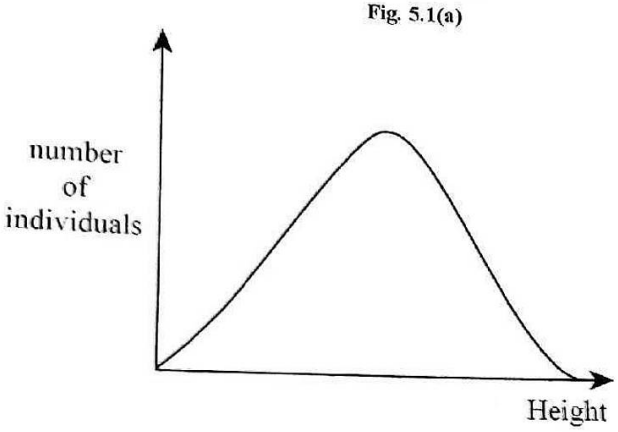


Fig. 5.1(b)

Identify the types of variation shown in:

Fig. 5.1 (a) .....

Fig. 5.1 (b) ..... [2]

(ii) State the **two** causes of variation.

1 .....

2 ..... [2]

(iii) Suggest **three** factors that may affect variation in **Fig. 5.1 (b)**.

1 .....

2 ..... [3]

3 .....

(b) Explain how artificial selection might be of economic importance to a farmer.

.....

.....

.....

.....

..... [3]

6. (a) State the **two** main components of a food chain.

1 .....

2 ..... [2]

(b) State any **three** features of savanna soils in Zimbabwe.

1 .....

2 .....

3 ..... [3]

(c) List any **two** disadvantages of an artificial ecosystem.

1 .....

2 ..... [2]

(d) Explain the importance of vegetative ground cover in an ecosystem.

.....

.....

.....

..... [3]

Section B

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

7 **(a)** Describe the functions of water in animals.

[6]

(b) Explain the importance of the high heat of vaporisation of water to living organisms.

[4]

8 **(a)** Outline the differences between monocotyledonous plants and dicotyledonous plants.

[6]

(b) Explain the importance of plants in human diet.

.....

.....

.....

.....

.....

..... [4]

.....

9 **(a)** Explain how climatic change is a threat to biodiversity.

.....

.....

.....

.....

.....

.....

.....

..... [6]

(b) Outline any **four** measures of conserving wildlife.

.....

.....

.....

.....

..... [4]

10 **(a)** Describe the risk of drinking alcohol during pregnancy.

.....

.....

.....

.....

.....

.....

.....

..... [6]

(b) Explain why antibiotics are ineffective in treating diseases caused by viruses and protozoa.

.....

.....

.....

.....

.....

.....

..... [4]

11 **(a)** Using examples, distinguish between infectious diseases and non-infectious diseases.

.....

.....

.....

.....

.....

.....

.....

..... [6]

.....

(b) Suggest ways of reducing the spread of sexually transmitted infections in Zimbabwe.

.....

.....

.....

.....

.....

.....

..... [4]

12 **(a)** Describe how natural selection can lead to evolution.

.....

.....

.....

.....

.....

.....

.....

.....

..... [6]

(b) Explain the need for animal breeding.

.....

.....

.....

.....

..... [4]