

Candidate Name _____

Centre Number				Candidate Number									

EXAMINATIONS COUNCIL OF ZAMBIA

Examination for School Certificate Ordinary Level

Biology

5090/2

Paper 2 Theory

Tuesday

31 OCTOBER 2017

Additional Materials:

Answer Booklet

Time 1 hour 45 minutes

Instructions to Candidates

Write your **name**, **centre number** and **candidate number** in the spaces at the top of this page and on the **Answer Booklet** used.

There are **ten** questions in this paper.

Section A

Answer **all** questions.

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

Section B

Answer any **three** questions.

Write your answers in the Answer Booklet provided.

At the end of the examination:

- 1 fasten the Answer Booklet used securely to the question paper,
- 2 enter the numbers of the Section B questions you have answered in the grid at the bottom right side corner.

Information for candidates

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 one hour on Section A and no longer than 45 minutes on Section B.

Cell phones are not allowed in the examination room.

FOR EXAMINER'S USE	
Section A	
Section B	
Total	

Section A Short answer questions [44 marks]

Answer all the questions in the spaces provided on the question paper.

1 Figure 1.0 shows some specialised cells, P, Q and R.

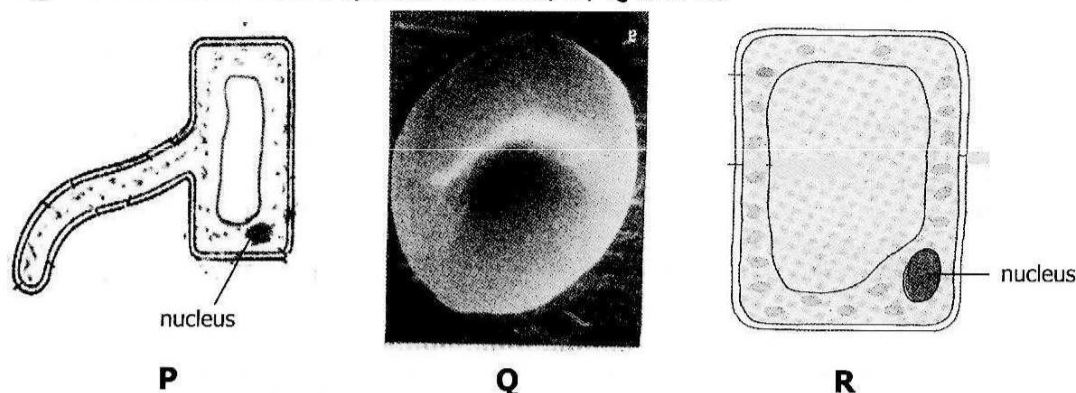


Figure 1.0

(a) Name each of the cells above.

P: [1]

Q: [1]

R: [1]

(b) (i) State the functions of cells **P** and **Q**.

Function of cell P: [1]

Function of cell Q [1]

(ii) Explain the adaptations for cells **P** and **Q** to their function.

Adaptation of cell P [1]

Adaptation of cell Q [1]

(c) Where in the leaf is cell **R** located?

..... [1]

[Total: 8]

- 2 **Figure 2.0** shows a graph showing the effect of temperature on an enzyme catalysed reaction.

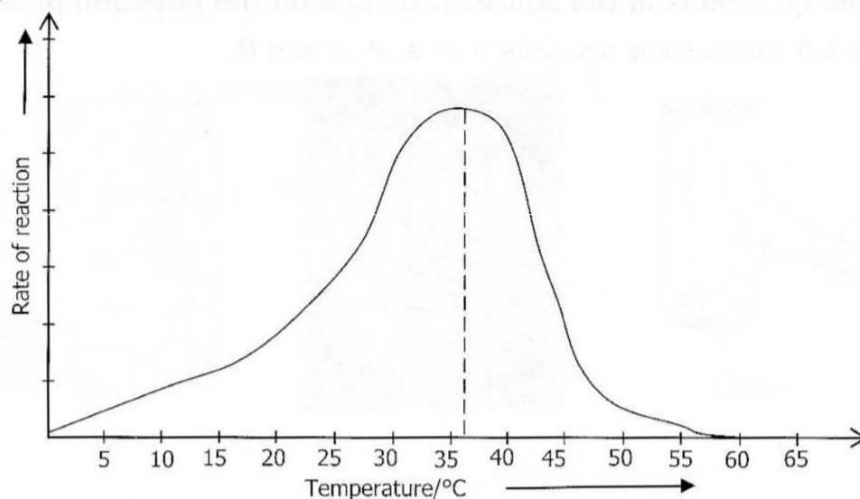


Figure 2.0

- (a) (i) What is an enzyme?

 [2]
- (ii) What is the optimum temperature of the enzyme reaction shown in the graph in **figure 2.0**?
 [1]
- (b) (i) At what temperature in **figure 2.0** is the enzyme completely denatured?
 [1]
- (ii) Give a reason for your answer in (b) (i) above.
 [1]
- (c) (i) Explain why it is important to measure the body temperature when a person is sick.
 [2]
- (ii) Propose **two** ways the body temperature of a sick person can be brought down to normal.
 1

 2
 [2]

[Total: 9]

[Turn over]

3 **Figure 3.0** shows the life cycle of a mosquito.

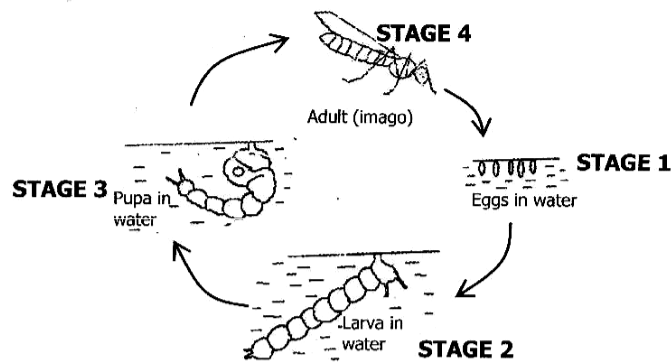


Figure 3.0

- (a) (i) Identify **two** stages in **figure 3.0** which are most suitable for eradicating malaria.

Stage:

Stage: [2]

- (ii) For each stage identified in (a) (i) above, state how malaria may be eradicated.

Stage:

Stage: [2]

- (iii) Suggest **two** ways in which malaria can be controlled in the community.

Way 1:

..... [1]

Way 2:

..... [1]

- (b) What term is given to the mosquito based on its role in the transmission of malaria pathogen?

..... [1]

- (c) (i) Define pathogen

.....

..... [1]

- (ii) Name the malaria causing pathogen.

..... [1]

[Total: 9]

- 4 **Figure 4.0** shows the longitudinal section of a stem.

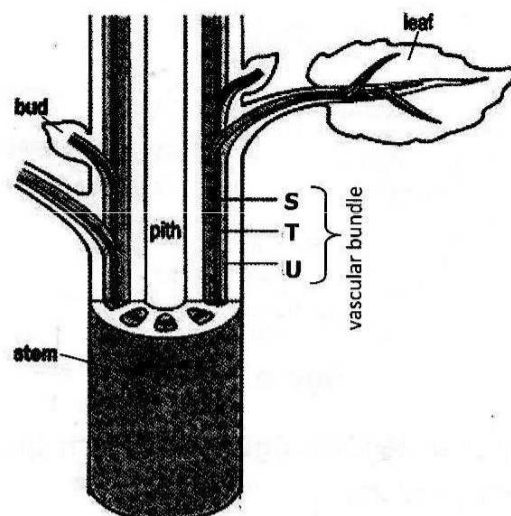


Figure 4.0

- (a) (i) Which letters in **figure 4.0** correspond to cambium, xylem and phloem?

Cambium

Xylem

Phloem

- (ii) Explain the functions of **S** and **T** in the plant.

Functions of S:

.....

Functions of T:

.....

[4]

- (b) (i) Which letter corresponds to the structure which needs companion cells to function properly?

.....

[1]

- (ii) Which letter in **figure 4.0** corresponds to a structure in which substances can either move up or down?

.....

[1]

[Total: 9]

5 Mrs Mumba delivered a baby girl in a certain hospital. Mrs Mumba has blood group **O** and the father to the girl has blood group **AB**. Mrs Mumba sues the hospital for giving her a wrong baby whose blood group was **O**.

(a) Explain using a genetic diagram why Mrs Mumba would win or lose the case.

[8]

(b) What could have been the correct genotype of the actual father?

.....

[Total: 9]

Section B Essay questions [36 marks]

Answer any three questions from this section. All answers must be in complete sentences and paragraphs.

- 6** **(a)** Identify causes of infertility in human beings. [6]
 (b) Describe how a healthy pregnancy could be maintained. [4]
 (c) Describe safe child birth. [2]

[Total: 12]

- 7** **(a)** Explain the functions of the following nerve cells.
 (i) Sensory neurone
 (ii) Motor neurone
 (iii) Relay neurone [6]

 (b) Describe, giving examples in each case,
 (i) spinal reflex action,
 (ii) conditioned reflex action. [6]

[Total: 12]

- 8** **(a)** Describe the antagonistic action of muscles in the iris. [4]
 (b) Compare and contrast exoskeleton and endoskeleton. [6]
 (c) Describe **one** joint disorder. [2]

[Total: 12]

- 9** **(a)** Define the term biodiversity. [2]
 (b) State the importance of biodiversity of organisms in an area. [4]
 (c) Describe the economic reasons for maintaining biodiversity. [6]

[Total: 12]

- 10** **(a)** Explain the term population. [4]
 (b) Discuss factors that cause changes in population size. [8]

[Total: 12]