

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.

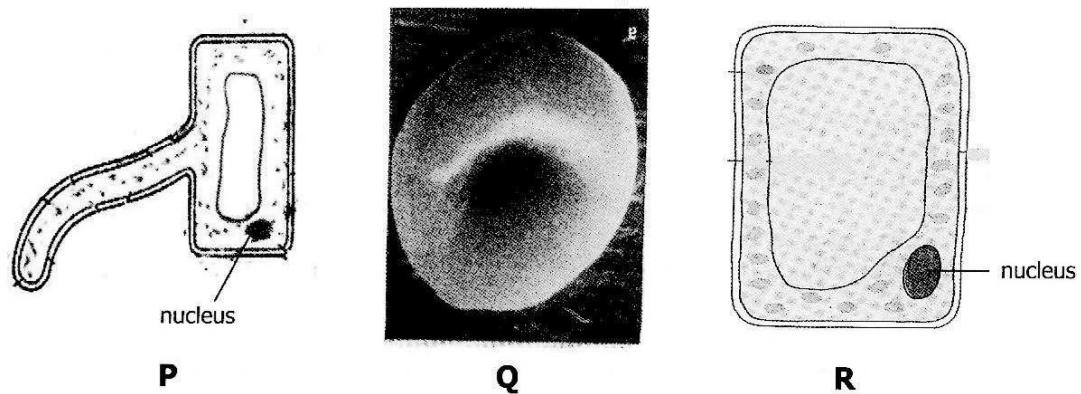
**Cell phones are not allowed in the examination room.**

FOR EXAMINER'S USE	
Section A	
Section B	
<a href="http://www.zedpastpapers.com">www.zedpastpapers.com</a>	
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]

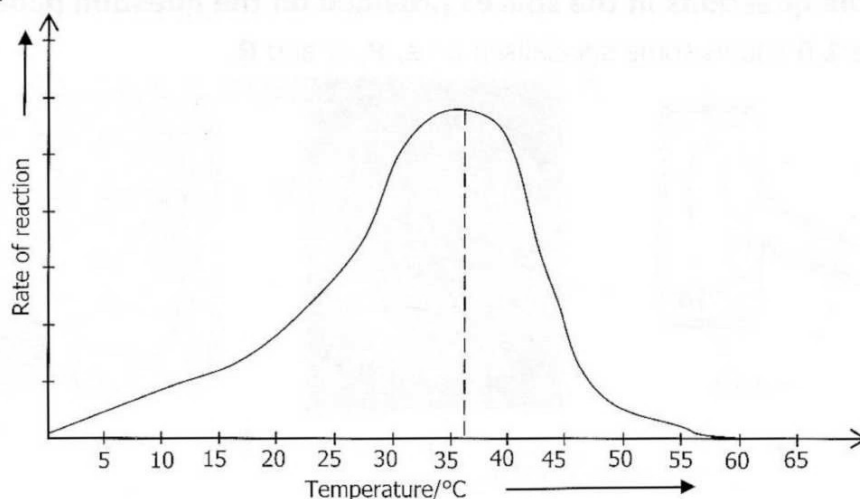
**(c)** Where in the leaf is cell **R** located?

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..... [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 ..... [www.zedpastpapers.com](http://www.zedpastpapers.com)

[Total: 9]

[Turn over



3 Figure 3.0 shows the life cycle of a mosquito.

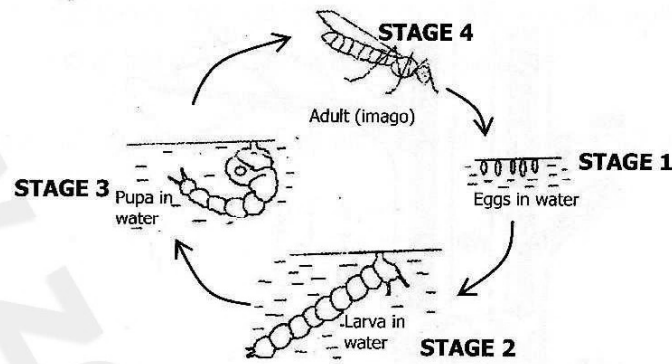


Figure 3.0

(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]

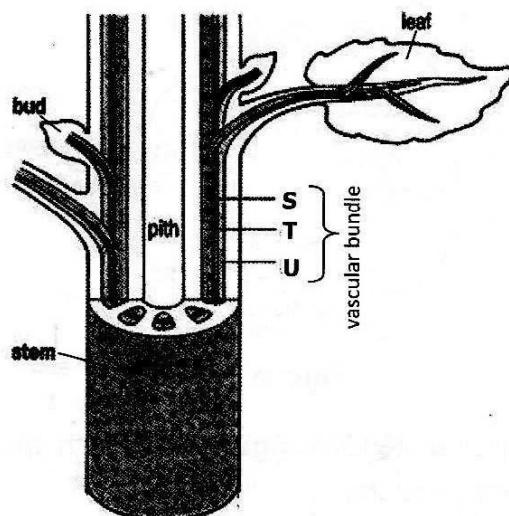
(ii) Name the malaria causing pathogen.

..... [1]

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[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]

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**[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?

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**[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]**

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