Centre Number	Candidate Number

Candidate Name _____

EXAMINATIONS COUNCIL OF ZAMBIA

Examination for School Certificate Ordinary Level

Biology 5090/2

Paper 2 Theory

Tuesday **30 OCTOBER 2018**

Additional Materials:
Answer Booklet

Time: 1 hour 45 minutes

Instructions to Candidates

Write your **name**, **centre number** and **candidate number** in the spaces provided 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.

Note: Section A answers must be written in the spaces provided in this question paper.

Section B

Answer any **three** questions.

Write your answers in the Separate 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 of this question paper.

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 1.1** and **1.2** show specialised cells **E** and **F**.

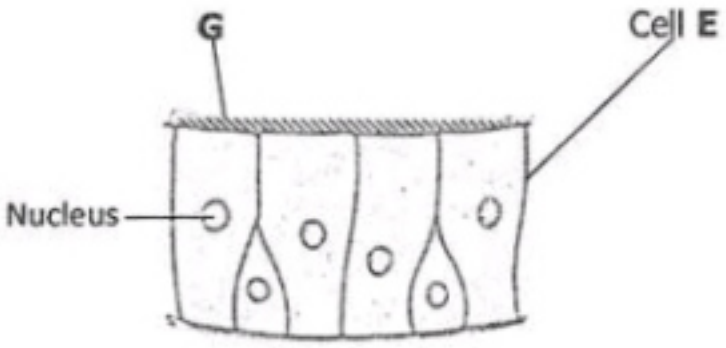

Figure 1.1

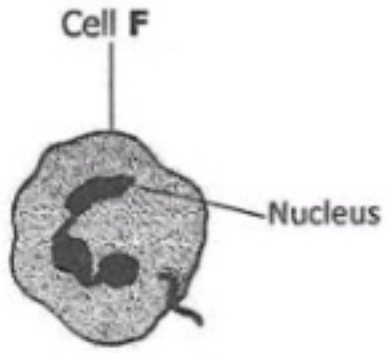

Figure 1.2

(a) **(i)** Identify the cell labelled **F** in **figure 1.2**.

Cell F: ..... [1]

(ii) Which feature in the diagram enables you to identify cell **F** in **(a) (i)** above?

Feature: ..... [1]

(b) **(i)** **Figure 1.1** shows a group of similar cells. What term is used to refer to such a group of cells?

Term:..... [1]

(ii) Suggest a region in the human body where **figure 1.1** is found.

..... [1]

(iii) Give **one** function of the part labelled **G** in **figure 1.1**.

..... [1]

(c) **(i)** State **two** specialised cells found in plants.

1: ..... [1]

2: ..... [1]

(ii) For one named specialised cell in **(c) (i)** above, explain its function.

.....

..... [1]

[Total: 8]

2 **Figure 2.0** shows the alimentary canal of a human being.

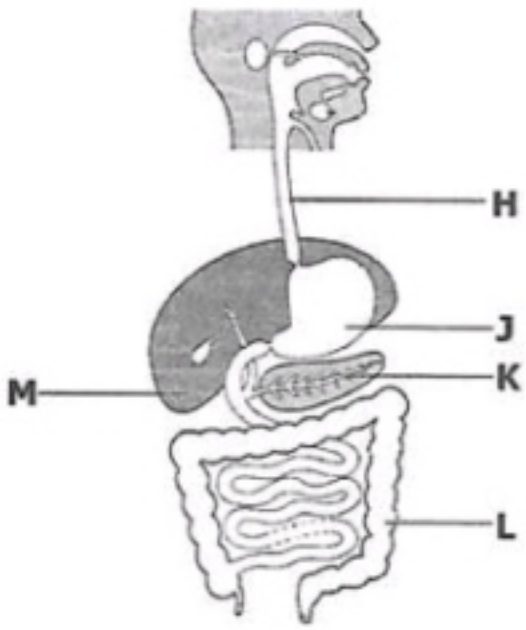

Figure 2.0

(a) Identify the parts labelled **H** and **J**.

H .....

J ..... [2]

(b) Explain the functions of the parts labelled **K** and **L** in digestion.

K .....

.....

L .....

..... [2]

(c) Label on **figure 2.0**, the structure where;

(i) bile is stored, with letter **X**.

(ii) hydrochloric acid is produced, with letter **Y**. [2]

(d) **(i)** State one metabolic function of the part labelled **M**.

.....

..... [1]

(ii) Describe **two** ailments which can result when structure **M** is not functioning normally.

1 .....

.....

2 .....

..... [2]

[Total: 9]

3 **Figure 3.0** summarises the development processes during sexual reproduction in human beings.

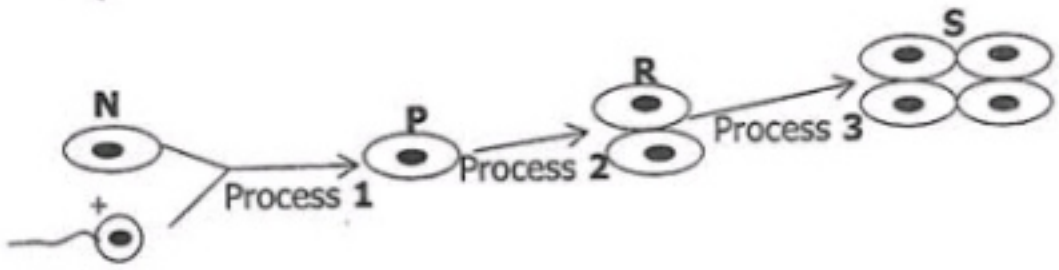

Figure 3.0

(a) **(i)** Identify the cells labelled **N** and **P**.

N: .....

P:..... [2]

(ii) Name processes **1** and **2**.

Process **1**:.....

Process **2**:..... [2]

(b) Suggest the part of the female reproductive organ in which process **1** takes place.

..... [1]

(c) Explain what happens at stage **R** for identical twins to be produced.

.....

.....

..... [2]

(d) Describe **two** situations which can result in infertility and cause process **1** **not** to take place.

.....

.....

..... [2]

[Total: 9]

4 **Figure 4.0** shows muscles and bones of the forearm of a human being.

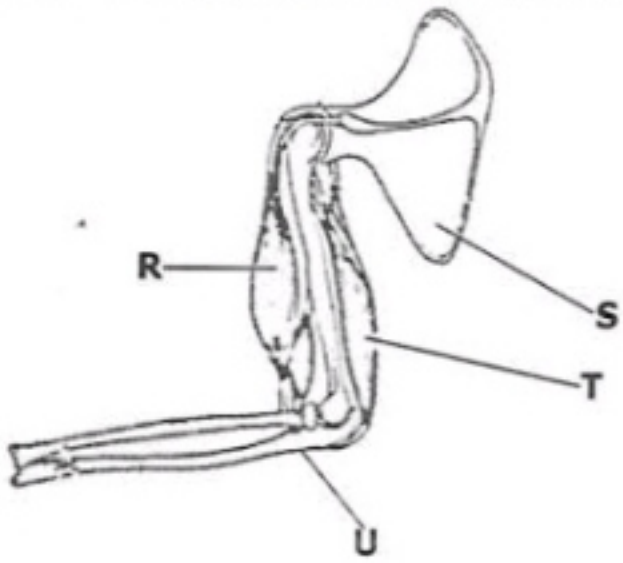

Figure 4.0

(a) Identify:

(i) Muscle **T**: .....

(ii) Bone **U**: ..... [2]

(b) **(i)** What name is given to the pair of muscles **T** and **R**.

..... [1]

(ii) Name **one** other such pair of muscles in the human body.

..... [1]

(c) Label on **figure 4.0**, where you find a;

(i) tendon,

(ii) pivot joint. [2]

(d) Give **two** ways in which skeletal muscles of an insect differ from the skeletal muscles of a human being.

1 .....

.....

2 .....

..... [2]

(e) Identify the bone labelled **S**.

..... [1]

[Total: 9]

5 Two farmers, one with a pure breeding black bull and the other with a pure breeding white cow decided to cross their cattle. The black bull was crossed with the white cow and all the resulting offspring had a coat colour called roan.

(a) Using letter **B** for the allele for black coat colour and **W** for the allele for white coat colour,

(i) Show the genotype of the offspring.

..... [1]

(ii) Explain why neither the bull nor the cow had their coat colour expressed in the phenotype of the offspring.

.....

..... [2]

(b) Using a genetic diagram, predict the chances of the Second Filia (F_2) offspring having a roan coat colour when the parent black bull was crossed with one of the roan offspring.

[6]

[Total: 9]