

Candidate Name _____

Centre Number				Candidate Number									

EXAMINATIONS COUNCIL OF ZAMBIA

Examination for School Certificate Ordinary Level

Biology Paper 3 Practical Test

5090/3

Tuesday

20 NOVEMBER 2018

Additional materials:

As listed in Instructions to Supervisors

Time: 1 hour 15 minutes

Instructions to Candidates

Write your name, centre number and candidate number in the spaces provided at the top of this page.

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

Answer **both** 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.

Cell phones are not allowed in the examination room.

For Examiner's Use	
1	
2	
Total	



Answer both questions

1 (a) You are provided with solutions **A** and **B**.

(i) Using the reagent provided, carry out food tests on the solutions **A** and **B** given.

Reagent	Solution	Method	Observation	Conclusion
Iodine solution	A			
	B			

[6]

(ii) State the importance of the food nutrient in solution **A**.

.....

.....

.....

[3]

(iii) Name the nutrient in the table above which is acted upon by pancreatic amylase in the digestive system.

.....

[1]



- (b) (i) You are provided with specimens **C** and **D**. Take a spatula full of specimen **C** and place it on the blotting paper labelled **C**. Repeat the instruction above for specimen **D**. Fold the blotting papers around the specimens and squeeze.

Unfold each blotting paper carefully to remove the contents. Examine the blotting papers **C** and **D** and write your observations and conclusions in the table below.

Test method	Specimen	Observation	Conclusion
Grease spot test	C		
	D		

[4]

- (ii) Which of the **two** nutrients tested above is emulsified by bile salts?

[1]

- (iii) Give a reason for your answer in (b) (ii) above.

[1]

- (iv) In which part of the digestive system is the nutrient emulsified?

[1]

- (v) State the importance of solution **C** in the nutrition of a mammal.

[3]

[Total: 20 marks]

2 Examine specimen **E** using a hand lens.

(a) State the phylum to which specimen **E** belongs.

..... [1]

(b) (i) Using a hand lens, draw a labelled diagram of specimen **E** in the space provided.



[8]

(ii) Measure the length of the drawing.

..... [1]

(c) Calculate the magnification of specimen **E**.

[3]

(d) (i) Identify the visible structural locomotion features of specimen **E**.

1

2 [2]

(ii) What are the functions of the structural features identified in (d) (i) above.

1

2 [2]

(e) Explain how specimen **E** is adapted to aquatic life.

.....

 [3]

[Total: 20 marks]



Candidate Name _____

Centre Number				Candidate Number									

EXAMINATIONS COUNCIL OF ZAMBIA

Examination for School Certificate Ordinary Level

Biology Paper 2 Theory

5090/2

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.

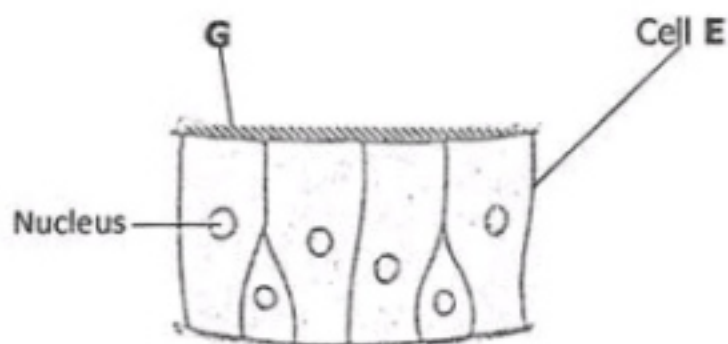


Figure 1.1

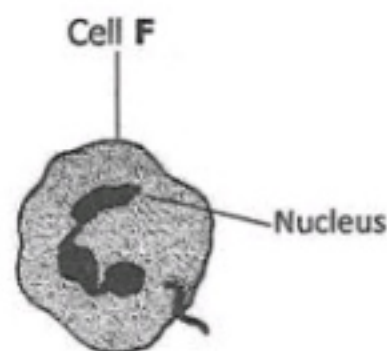


Figure 1.2

- (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.

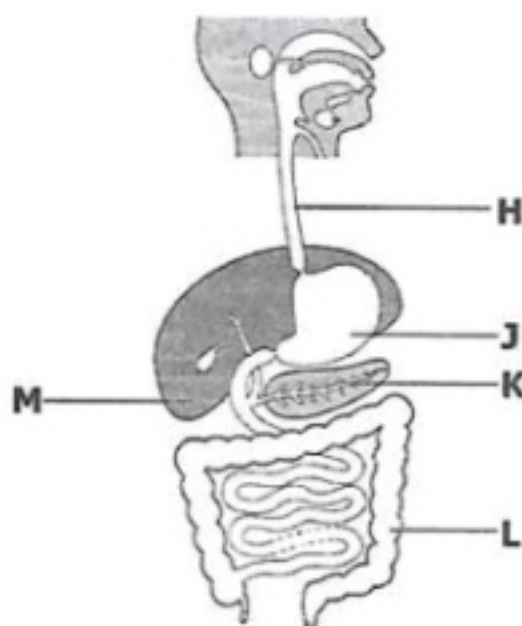


Figure 2.0

(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.

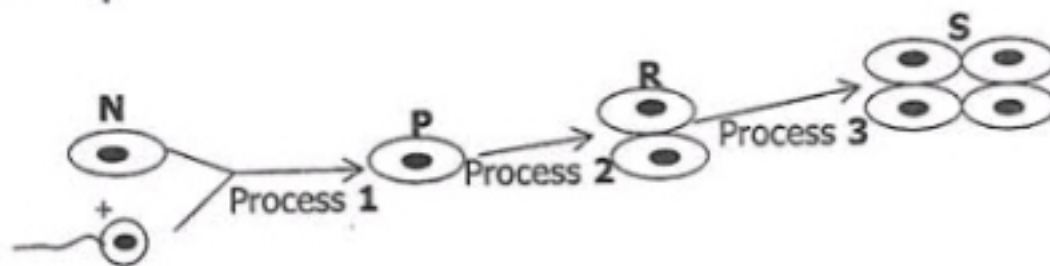


Figure 3.0

- (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.

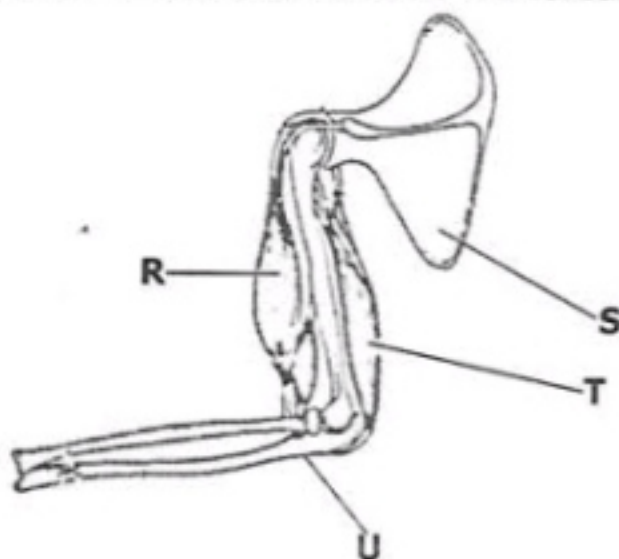


Figure 4.0

- (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]