

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			

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[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		

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[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**.

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(d) (i) Identify the visible structural locomotion features of specimen **E**. [3]

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 _____

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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.

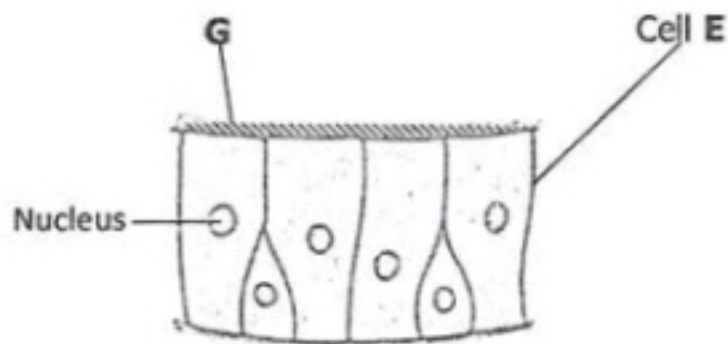


Figure 1.1

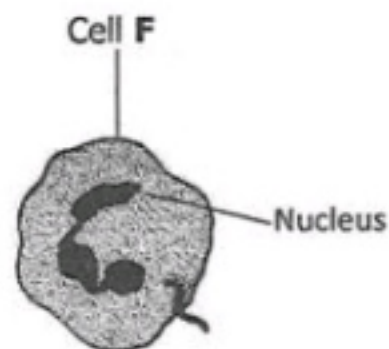


Figure 1.2

(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]

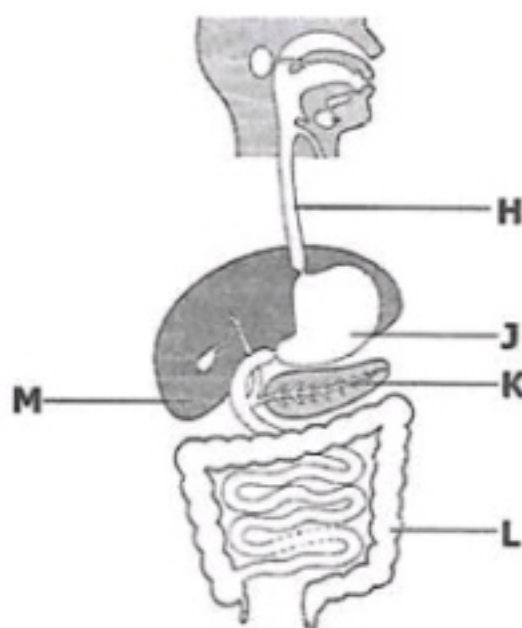
(ii) For one named specialised cell in (c) (i) above, explain its function.

.....

..... [1]

[Total: 8]

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



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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.

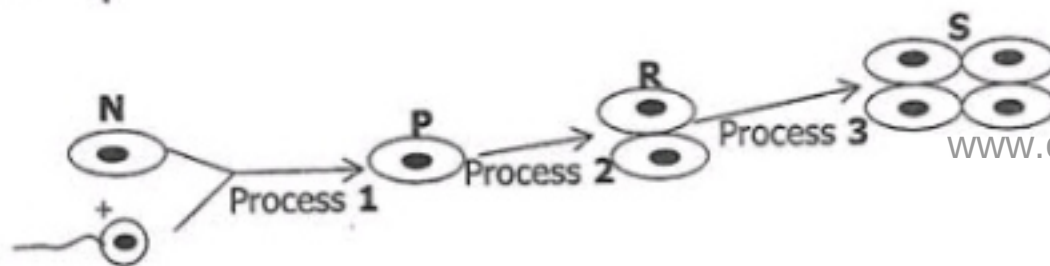


Figure 3.0

- (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.

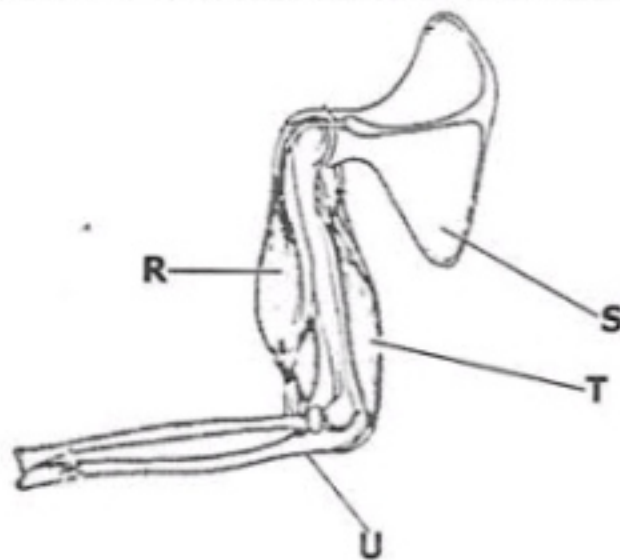


Figure 4.0

- (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.

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(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.

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[6]

[Total: 9]