



07634362



Centre Number				Examination Number							

EXAMINATIONS COUNCIL OF ZAMBIA

Examination for School Certificate Ordinary Level



Biology

5090/2

Paper 2 Theory

Tuesday
8 NOVEMBER 2022
Additional Materials:

Answer Booklet

Time: 1 hour 45 minutes
Marks: 80

Instructions to Candidates

1. Write the **centre number** and your **examination number** on **every page** of this question paper and on the separate **Answer Booklet** provided.

2. There are **two** sections in this paper, **Section A** and **B**.

(i) Section A

There are **five** questions in this section. Answer **all**.
Write your answers in the spaces provided on the question paper.

(ii) Section B

There are **five** questions in this section. Answer any **three** questions.
Write your answers in the separate Answer Booklet provided.

3. At the end of the examination:

(i) fasten the Answer Booklet securely to the question paper.

(ii) enter the numbers of the **Section B** questions you have answered in the grid provided.

Information for Candidates

1. The number of marks is given in brackets [] at the end of each question or part question.

2. You are advised to spend no longer than 40 minutes on **Section A**.

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

	For Examiner's Use	
	For Candidate's Use	Mark Obtained
Section A		Examiner's Initials
1		
2		
3		
4		
5		
Section B		
Total		

Centre Number	Examination Number														

Section A: Short answer questions [44 MARKS]

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

- 1** Figure 1.1 shows two generalised cells **F** and **G** of living organisms.

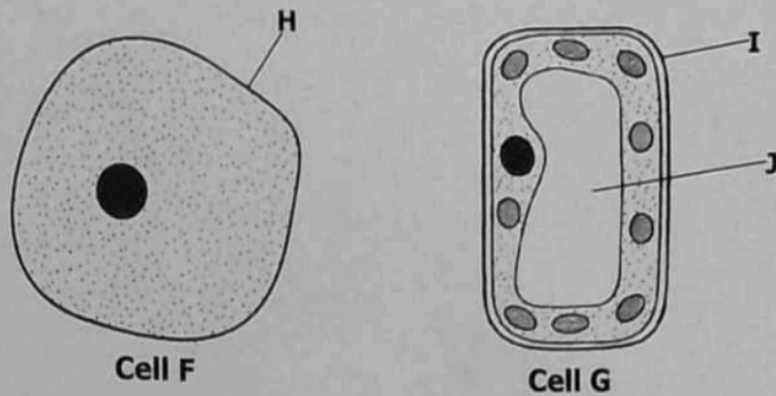


Figure 1.1

- (a) (i) Identify the part labelled **H**.
..... [1]
- (ii) How does part **H** differ from **I**?
.....
..... [1]
- (iii) Explain the function of structure labelled **J**.
..... [1]
- (iv) To which group of living organisms does cell **F** belong?
..... [1]

- (b) Figure 1.2 shows the cell organisation levels in multicellular organisms.

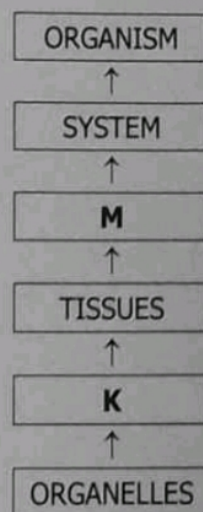


Figure 1.2

- (i) Identify the parts labelled **K** and **M**.
K [1]
M [1]
- (ii) State the level of cell organisation at which muscles would be found.
 [1]
- (iii) Give one example of a system in plants and in animals.
 Plants [1]
 Animals [1]

[Total: 9 marks]

- 2 (a) **Figure 2.1** shows a table of substances absorbed by plants from the soil.

Oxygen	Nitrates	Potassium	Water
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Figure 2.1

From **Figure 2.1**, identify the substance(s) which enter(s) the plant by

- (i) osmosis [1]
 (ii) active transport [1]
 (iii) diffusion [1]

- (b) **Figure 2.2** is a graph showing the effect of pH on the rate of enzyme controlled reactions **N** and **O**.

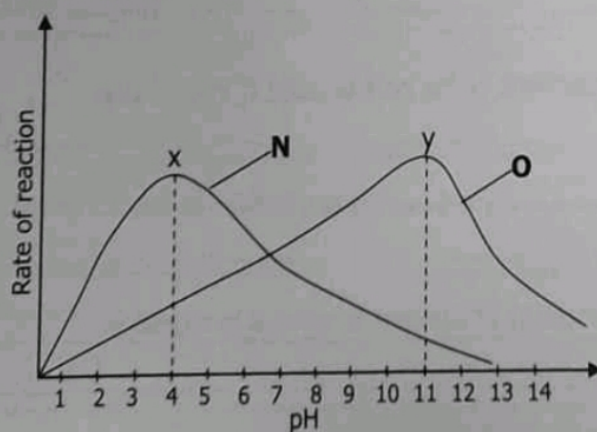


Figure 2.2

- (i) What term is given to the parts labelled **X** and **Y** in the graph?
 [1]
- (ii) Which reaction is under acidic conditions?
 [1]

Centre Number				Examination Number											

- (iii) Which reaction could only be for a protein food? Give a reason for your answer.

Reaction: [1]

Reason: [1]

- (c) Explain the role of enzymes in metabolism.

..... [2]

[Total: 9 marks]

- 3 Figure 3 shows part of the alimentary canal of a human being.

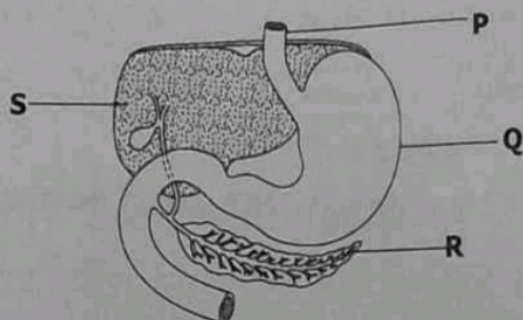


Figure 3

- (a) Identify the parts labelled P and Q.

P [1]

Q [1]

- (b) Explain the functions of the part labelled R in digestion.

..... [3]

- (c) State **two** functions of the part labelled S in digestion.

1 [1]

2 [1]

- (d) Describe **two** effects of the common ailments of the part labelled S to the human body.

1 [1]

2 [1]

[Total: 9 marks]

Centre Number	Examination Number														

4 **Figure 4** summarises the stages in the formation of the human foetus.

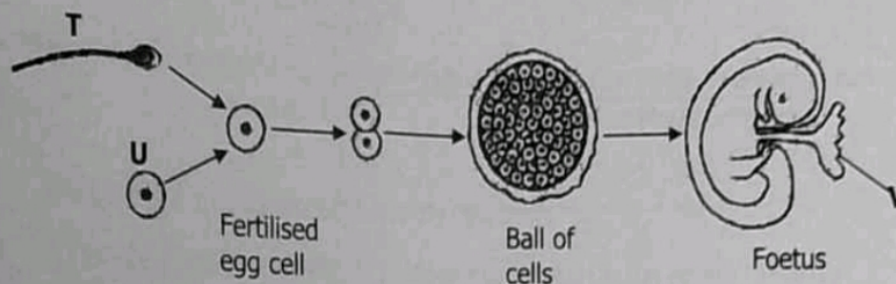


Figure 4

(a) (i) Identify the cells labelled **T** and **U**.

T [1]

U [1]

(ii) State **one** way in which cell **T** and cell **U** in **Figure 4** are genetically similar.

..... [1]

(iii) Mention **three** functions of the part labelled **V**.

1 [1]

2 [1]

3 [1]

(b) Identify **three** causes of infertility in human beings.

1 [1]

2 [1]

3 [1]

[Total: 9 marks]

Centre Number				Examination Number											

5 **Figure 5** shows blood group phenotypes for a mother and her two children.

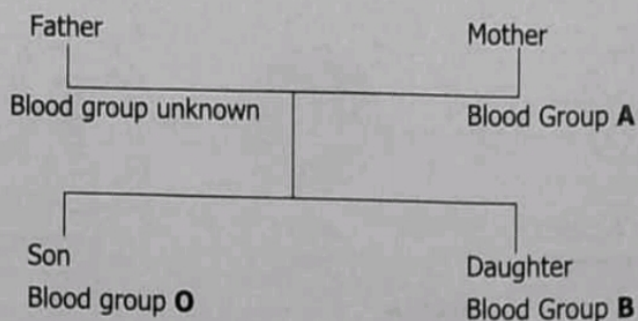


Figure 5

- (a) From **Figure 5**, deduce the genotypes for the father and mother.
 Father: [1]
 Mother: [1]
- (b) The daughter got married and had a child with blood group **AB**. What was the blood group phenotype of the husband?
 [1]
- (c) The father divorced the wife and married another woman with blood group **B** and their first child had blood group **O**. With the help of a genetic diagram, explain how this was possible.

[5]

[Total: 8 marks]

Centre Number				Examination Number														

Section B: Essay questions [36 MARKS]

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

1 (a) Describe the **two** types of tissue respiration. [4]

(b) What are the adverse effects of cigarette smoke on the health of human beings? [8]

[Total: 12 marks]

2 (a) Describe the process of excretion in human beings. [6]

(b) Describe the role of the kidney in maintaining the balance of water and salt ions in the blood. [6]

[Total: 12 marks]

3 (a) Using **named** examples, explain spinal, cranial and conditioned reflex actions. [6]

(b) Describe the common causes and methods of preventing blindness. [6]

[Total: 12 marks] www.eczpastpapers.com

4 (a) Describe the functions of the skeleton. [6]

(b) Explain why a bone is considered as a living tissue. [6]

[Total: 12 marks]

5 (a) Explain the importance of a rich biodiversity and show how human activities reduce biodiversity. [6]

(b) Describe how carbon is recycled within an ecosystem. [6]

[Total: 12 marks]