Centre Number	Examination Number

3 **Figure 3.0** below shows a section through a nephron.

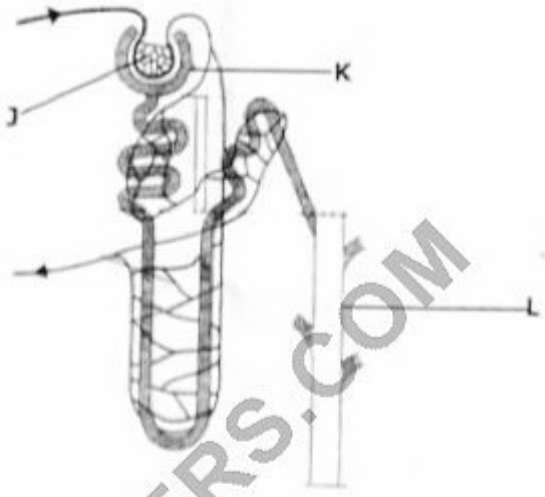

Figure 3.0

(a) Name the parts labelled **J**, **K** and **L**.

J ..... [1]

K ..... [1]

L ..... [1]

(b) (i) Suggest **three** substances that are **not** filtered out at **J**.

1 .....

2 .....

3 ..... [3]

(ii) Explain what would happen at **J** if the coiling of the blood capillary was increased.

.....

..... [1]

(c) Name the hormone that causes the reabsorption of water in the kidney and the organ where it is produced.

Hormone ..... [1]

Name of organ ..... [1]

[Total: 9]

Centre Number	Examination Number

4 **Figure 4.0** below shows the external parts of the human eye.

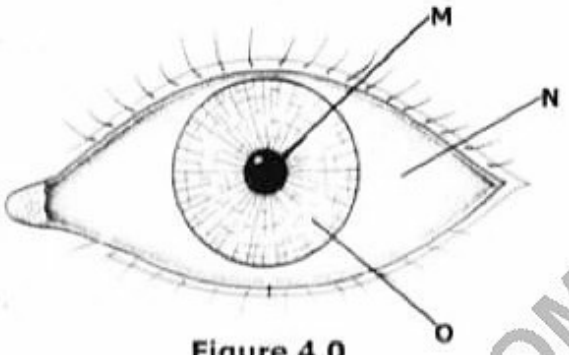

Figure 4.0

(a) **(i)** Name the parts labelled **M** and **N**.

M ..... [1]

N ..... [1]

(ii) Explain how **N** is adapted to its function.

.....

..... [2]

(b) Describe the role played by **M** and **O** when a person moves to a room with dim light.

M .....

O ..... [3]

(c) Explain the cause of short sightedness and how it can be corrected.

Causes .....

.....

Correction .....

..... [2]

[Total: 9]

Centre Number	Examination Number

5 Red-green colour blindness is a sex-linked characteristic.

(a) **(i)** Define 'sex-linked characteristic'.

.....

..... [1]

(ii) What can cause sex-linked genetic disorders like the red-green colour blindness?

.....

..... [1]

(b) A normal couple had a colour blind son. Using the gene **'R'** for normal colour vision and gene **'r'** for colour blindness, write down the genotypes of:

(i) **father** .....

(ii) **mother** ..... [2]

(c) Using a genetic diagram, show how the son could have been born colour blind.

[4]

[Total: 8]

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Section B [36 marks]

Answer any **three** questions.

All answers should be in sentence form and in paragraphs.

6 **(a)** Describe the health risks associated with foetal development in humans. [4]

(b) Describe the benefits and possible risks of using contraceptive pills and injections. [4]

(c) Explain other methods of birth control in humans apart from the use of contraceptive pills and injections. [4]

[Total: 12]

7 **(a)** Explain the components of blood plasma. [3]

(b) Investigate and describe the common blood disorders. [9]

[Total: 12]

8 Describe malaria as a disease under the following:

(a) causative agent, [1]

(b) signs and symptoms, [7]

(c) methods of transmission and control. [4]

[Total: 12]

9 **(a)** With the help of **named** examples, describe the different types of skeletons. [8]

(b) Explain the functions of the vertebral column. [4]

[Total: 12]

10 **(a)** Explain the meaning of the following ecological terms:

(i) Species, [2]

(ii) Niche, [2]

(iii) Habitat. [2]

(b) Identify the undesirable effects of water pollution by raw sewage. [6]

[Total: 12]

Centre Number	Examination Number

EXAMINATIONS COUNCIL OF ZAMBIA

Examination for General Certificate of Education Ordinary Level

Biology 5090/2

Paper 2 Theory

2020

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 **ten** questions in this paper.

3 **Section A**
- (i) Answer **all** questions.
- (ii) Write your answers in the spaces provided on the question paper.

4 **Section B**
- (i) Answer any **three** questions.
- (ii) Write your answers in the Answer Booklet provided.

5 At the end of the examination:
- (i) fasten the Answer Booklet used securely to the question paper,
- (ii) **enter** the numbers of the Section B questions you have answered in the grid on the bottom right side corner.

FOR EXAMINER'S USE	
Section A	
Section B	
Total	

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 one hour on Section A and no longer than 45 minutes on Section B.

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

Centre Number	Examination Number

Section A [44 marks]

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

1 **Figure 1.0** shows a plant cell.

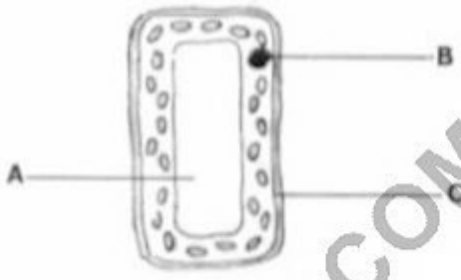

Figure 1.0

(a) (i) Name the parts labelled **A**, **B** and **C**.

A ..... [1]

B ..... [1]

C ..... [1]

(ii) Name the organ in the plant in which **figure 1.0** is found. Give a reason for your answer.

Organ of plant.....

Reason .....

..... [2]

(b) Describe **two** adaptations of the cell in **figure 1.0** which enable it to carryout its functions.

Adaptation 1 ..... [1]

Adaptation 2 ..... [1]

(c) Explain what would happen to the cell in **figure 1.0** above, if it was placed in a test tube containing distilled water.

.....

..... [2]

[Total: 9]

Centre Number	Examination Number

2 **Figure 2.0** below shows the internal structure of a tooth.

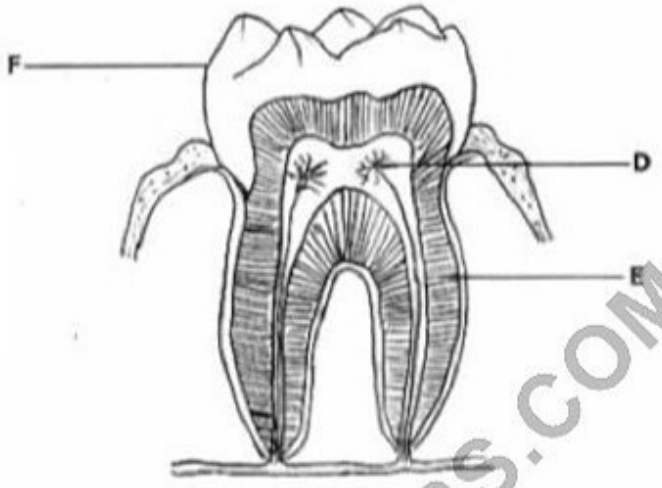

Figure 2.0

(a) Name the parts labelled **D** and **E** in **figure 2.0** above.

D ..... [1]

E ..... [1]

(b) **(i)** Explain what happens to the part labelled **F** during tooth decay.

.....

..... [3]

(ii) Looking at the shape of the tooth in **figure 2.0** above, suggest the role it plays in the digestion of food.

.....

..... [1]

(c) Complete the human dental formula below by filling in the missing numbers **G**, **H** and **J**.

$$\mathbf{G}\left(i\frac{2}{2}\ c\frac{1}{\mathbf{H}}\ pm\frac{2}{2}\ m\frac{\mathbf{J}}{3}\right)=32$$

G ..... [1]

H ..... [1]

J ..... [1]

[Total: 9]