

Centre Number				Examination Number									

**EXAMINATIONS COUNCIL OF ZAMBIA**

**Examination for General Certificate of Education Ordinary Level**

**Biology**  
**Paper 2 Theory**

**5090/2**

**2020**

5090-2-01-808

Additional materials:  
Answer Booklet

**Time: 1 hour 45 minutes**

**Marks: 80**

**Instructions to Candidates**

- Write the **centre number** and your **examination number** on every page of this question paper and on the separate **Answer Booklet** provided.
- There are **ten** questions in this paper.
- Section A**
  - Answer **all** questions.
  - Write your answers in the spaces provided on the question paper.
- Section B**
  - Answer any **three** questions.
  - Write your answers in the Answer Booklet provided.
- At the end of the examination:
  - fasten the Answer Booklet used securely to the question paper,
  - 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	
<b>Total</b>	

**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.





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3 Figure 3.0 below shows a section through a nephron.

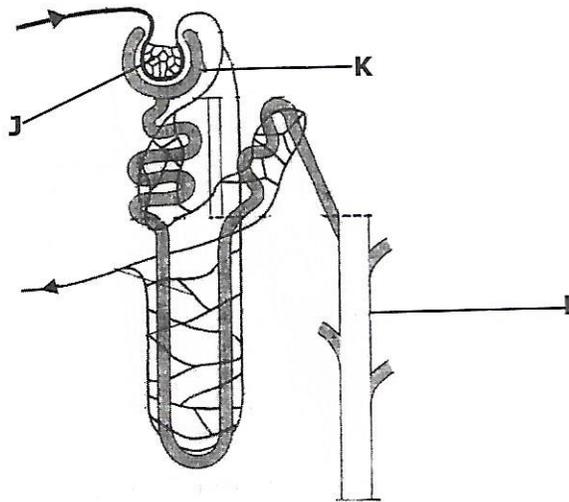


Figure 3.0

(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 ..... [3]  
 2 .....  
 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]

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

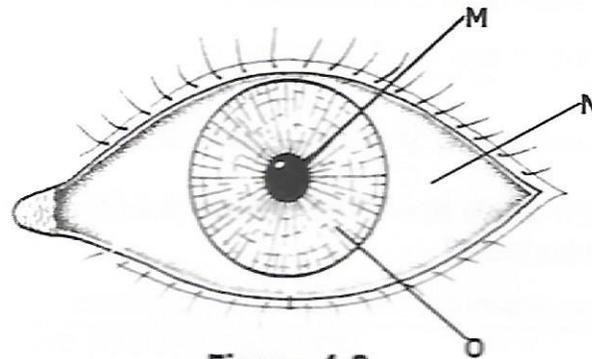


Figure 4.0

(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]

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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.

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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]**