EXAMINATIONS COUNCIL OF LESOTHO
Lesotho General Certificate of Secondary Education

CANDIDATE NAME																			
CENTRE NUMBER						CANDIDATE NUMBER													

BIOLOGY

Paper 2

0180/02

October/November 2018

1 hour 45 minutes

Candidates answer on the Question Paper.

Marks: 69

READ THESE INSTRUCTIONS FIRST

Write your name, centre number and candidate number in the spaces at the top of this page.
Write in dark blue or black pen.
You may use an HB pencil for any diagrams or graphs.
Do not use staples, paper clips, highlighters, glue or correction fluid.
DO **NOT** WRITE IN ANY BARCODES.

Section A
Answer **all** questions.
Write your answers in the spaces provided on the question paper.
You are advised to spend no longer than one hour on Section A.

Section B
Answer **all** questions.
Write your answers in the spaces provided on the question paper.

You may lose marks if you do not show your working or if you do not use appropriate units.
Electronic calculators may be used.

At the end of the examination, fasten all your work securely together.
The number of marks is given in brackets [ ] at the end of each question or part question.

For Examiner's Use	
1	
2	
3	
4	
5	
6	
7	
Total	

This document consists of **9** printed pages and **3** blank pages.

SECTION A

1 Fig. 1.1 shows two worms **A** and **B**.

Fig. 1.1

(a) Worms are living organisms.

State **three** characteristics that make them living.

1. .....

2. .....

3. ..... [3]

(b) Use Table 1 to compare the features of annelids and nematodes in Fig. 1.1

Annelids	Nematodes

Table 1 [4]

(c) State **two** differences between bacteria and viruses.

1. .....

.....

2. .....

..... [2]

[Total: 9]

2 Fig. 2.1 shows an apparatus used for collecting some substances in cigarette smoke.

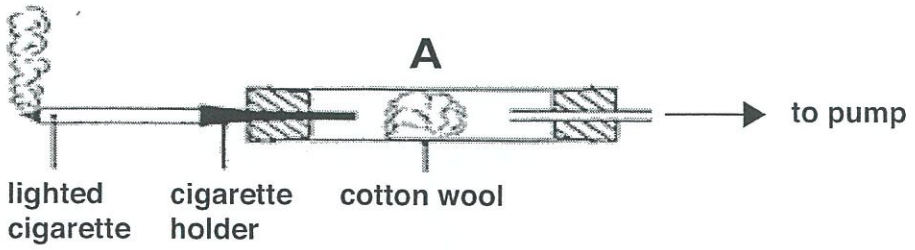

Fig. 2.1

As the cigarette burns the cotton wool turns brown.

(a) (i) Name part of the respiratory system represented by the cotton wool.

..... [1]

(ii) Name the substance in cigarette smoke which turns cotton wool brown.

..... [1]

(iii) Name **any** disease that can be caused by smoking.

..... [1]

(iv) Explain how smoking affects the amount of oxygen taken up by the blood.

.....

.....

.....

.....

.....

..... [3]

(b) Describe a health risk for an embryo developing in a mother who smokes during pregnancy.

.....

.....

.....

..... [2]

[Total: 8]

[Turn over

3 Fig. 3.1 shows a bean plant.

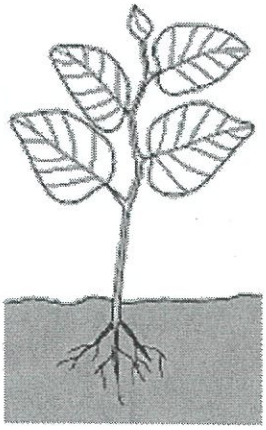

Fig. 3.1

(a) (i) On which part of a plant does photosynthesis occur? [1]

(ii) Describe and explain how the structure named in (a)(i) above is adapted for photosynthesis.

.....

.....

.....

.....

.....

.....

.....

..... [4]

(b) Explain why a shoot always grows towards the source of light, when responding to stimulus.

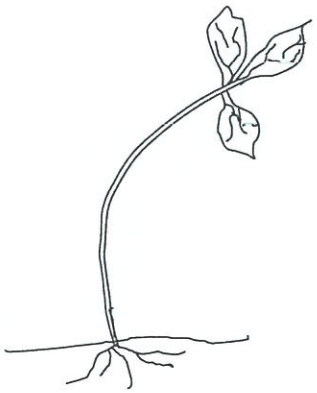

Fig. 3.2

Explain the response shown by the shoot in Fig. 3.2.

.....

.....

.....

.....

.....

.....

.....

..... [5]

(c) A plant grows in waterlogged soil with sufficient ions for normal growth but it still has small yellow leaves.

Suggest possible reasons for the yellow leaves.

.....

.....

.....

.....

.....

..... [3]

[Total: 13]

4 Fig. 4.1 shows the human female reproductive system.

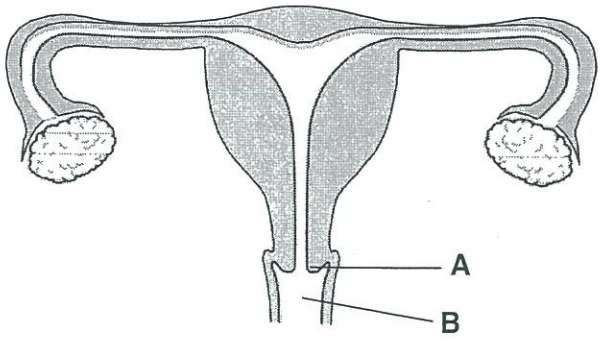

Fig. 4.1

(a) Name the structures labelled **A** and **B**.

A .....

B ..... [2]

(b) **(i)** In the female reproductive system, where are gametes produced. [1]

(ii) State where fertilisation normally occur in the female reproductive system. [1]

(c) List **three** secondary sexual characteristics that are stimulated by testosterone.

1. .....

2. .....

3. ..... [3]

(d) A man has a proper erection and produces normal sperm but cannot impregnate a fertile woman.

Suggest possible causes of his infertility.

.....

.....

.....

..... [2]

[Total: 9]

QUESTION HAS BEEN OMITTED

SECTION B

6 **(a)** Define the term *digestion*.

.....

.....

.....

..... [2]

(b) Describe the digestion of carbohydrates in potatoes along the human alimentary canal.

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... [5]

(c) Describe the structural adaptations of the villus for absorption.

.....

.....

.....

.....

.....

..... [3]

[Total: 10]

7 **(a)** Describe the differences between nervous and hormonal control systems.

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... [5]

(b) Describe how blood glucose is regulated in humans.

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... [5]

[Total: 10]

8 **(a)** Using symbols R and r, show the parent genotype, gametes, offspring genotype, ratio and phenotype.

[5]

(b) Explain the advantages of using insulin produced by genetically engineered bacteria compared to insulin obtained from dead animal tissue.

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... [5]

[Total: 10]

BLANK PAGE

BLANK PAGE

BLANK PAGE