

Candidate Name: _____

Centre Number		Candidate Number							



Time: 1 hour 45 minutes

Instructions To Candidates

Write your name, centre number and candidate number in the spaces at the top of this page and on the **Answer Booklet** used.

There are **ten** questions in this paper.

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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:

- 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 on the bottom right side corner.

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 [44 marks]

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

1 **Figure 1.1** and **Figure 1.2** show the structure of specialised cells in plants.

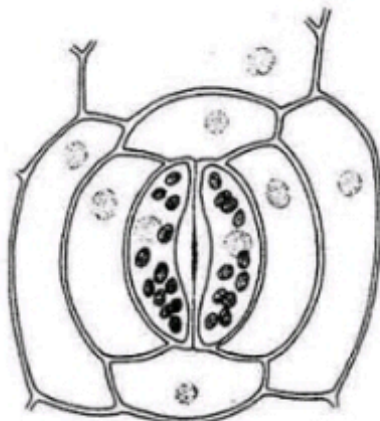


Figure 1.1

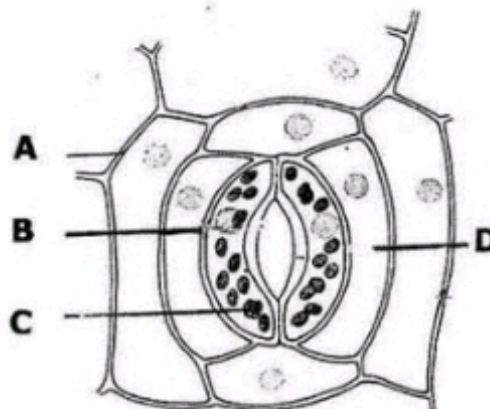


Figure 1.2

- (a) (i) Identify the cells labelled **A** and **B**.

A

B [2]

- (ii) Identify the parts labelled **C** and **D**.

C

D [2]

- (b) (i) Which figure shows a closed stoma?

..... [1]

- (ii) Explain how the opening of a stoma is brought about.

.....

.....

.....

.....

.....

..... [3]

[Total: 8]

- 2 **Figure 2.1** shows a section through a human tooth.

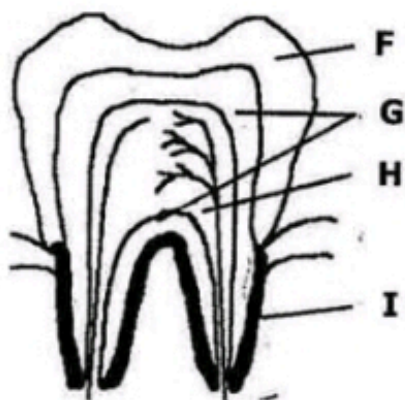


Figure 2.1

- (a) (i) State the names of the parts labelled **F** and **G**.

F

G [2]

- (ii) Explain the functions of the parts labelled **H** and **I** in **Figure 2.1**.

H

.....

.....

.....

I

.....

..... [2]

- (b) (i) Explain how tooth decay is brought about.

.....

.....

..... [3]

- (ii) Suggest **two** ways of preventing tooth decay.

.....

.....

..... [2]

[Total: 9]

[Turn over]

- 3 **Figure 3.1** shows a cassava plant with root tubers.



Figure 3.1

- (a) (i) Which common food nutrient is stored in the root tuber?
..... [1]
- (ii) State where this food in the root tubers was manufactured?
..... [1]
- (iii) Explain how this food manufactured in (a) (ii) above found itself in storage form in the root tubers.
.....
.....
.....
..... [3]
- (b) (i) State the nutrient in the soil which is necessary for photosynthesis.
..... [1]
- (ii) Suggest how this nutrient is taken up from the soil to the leaves in the plant in **Figure 3.1**.
.....
.....
.....
..... [3]

[Total: 9]

- 4 **Figure 4.1** shows a food web in a given ecosystem.

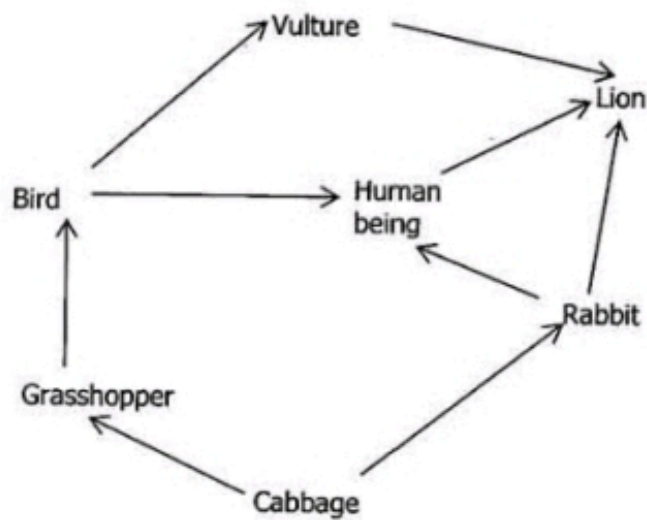


Figure 4.1

- (a) (i) Identify any primary consumer.

..... [1]

- (ii) Construct a food chain using three organisms from **Figure 4.1**.

..... [1]

- (iii) Using the food chain in (a) (ii) construct a pyramid of energy.

[3]

- (b) Distinguish between a food chain and a food web.

.....

 [2]

- (c) Explain why organisms at the end of a food chain have the least amount of energy.

.....

.....

.....

..... [2]

[Total: 9]

- 5 Pure breeding dwarf garden pea plants were crossed with pure-breeding tall garden pea plants. The resulting offsprings were all tall.

- (a) (i) What is meant by pure breeding?

.....

..... [1]

- (ii) Using your own symbols, state the genotypes of the parents.

Pure breeding dwarf garden pea plant =

Pure breeding tall garden pea plant = [2]

- (b) Using a genetic diagram, show the cross between a dwarf parent and one of the offspring.

[5]

- (c) Differentiate between homozygous and heterozygous.

.....

.....

..... [1]

[Total: 9]

Section B [36 marks]

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

- 6** (a) Describe anaerobic respiration in yeast. [4]
 (b) Explain the use of yeast in brewing and baking. [5]
 (c) Compare and contrast anaerobic respiration in man and yeast. [3]

[Total: 12]

- 7** (a) Describe the following methods of artificial vegetative propagation.
 (i) grafting
 (ii) budding [6]
 (b) Describe the artificial methods of birth control in humans. [6]

[Total: 12]

- 8** (a) Explain the functions of the following parts in the human ear.
 (i) Eustachian tube
 (ii) Cochlea [5]
 (b) Distinguish between the sensory neurone and the motor neurone. [3]
 (c) Describe the pupil reflex action in humans. [4]

[Total: 12]

- 9** (a) Explain the following terms:
 (i) Pollination
 (ii) Fertilisation [3]
 (b) Discuss fruit and seed dispersal. [9]

[Total: 12]

- 10** (a) What is meant by excretion? [2]
 (b) Explain how the following substances are excreted from the body.
 (i) Carbon dioxide
 (ii) Urea [10]

[Total: 12]