EXAMINATIONS COUNCIL OF SWAZILAND
in collaboration with
UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
Swaziland General Certificate of Secondary Education

CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER

1488671316

BIOLOGY **6884/05**

Paper 5 Alternative to Practical Test **October/November 2012**

1 hour 30 minutes

Candidates answer on the Question Paper.

No Additional Materials are required.

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name on all the work you hand in.
Write in dark blue or black pen.
You may use a soft pencil for any diagrams, graphs, tables or rough working.
Do not use staples, paper clips, highlighters, glue or correction fluid.

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

You may use a calculator.

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	
Total	

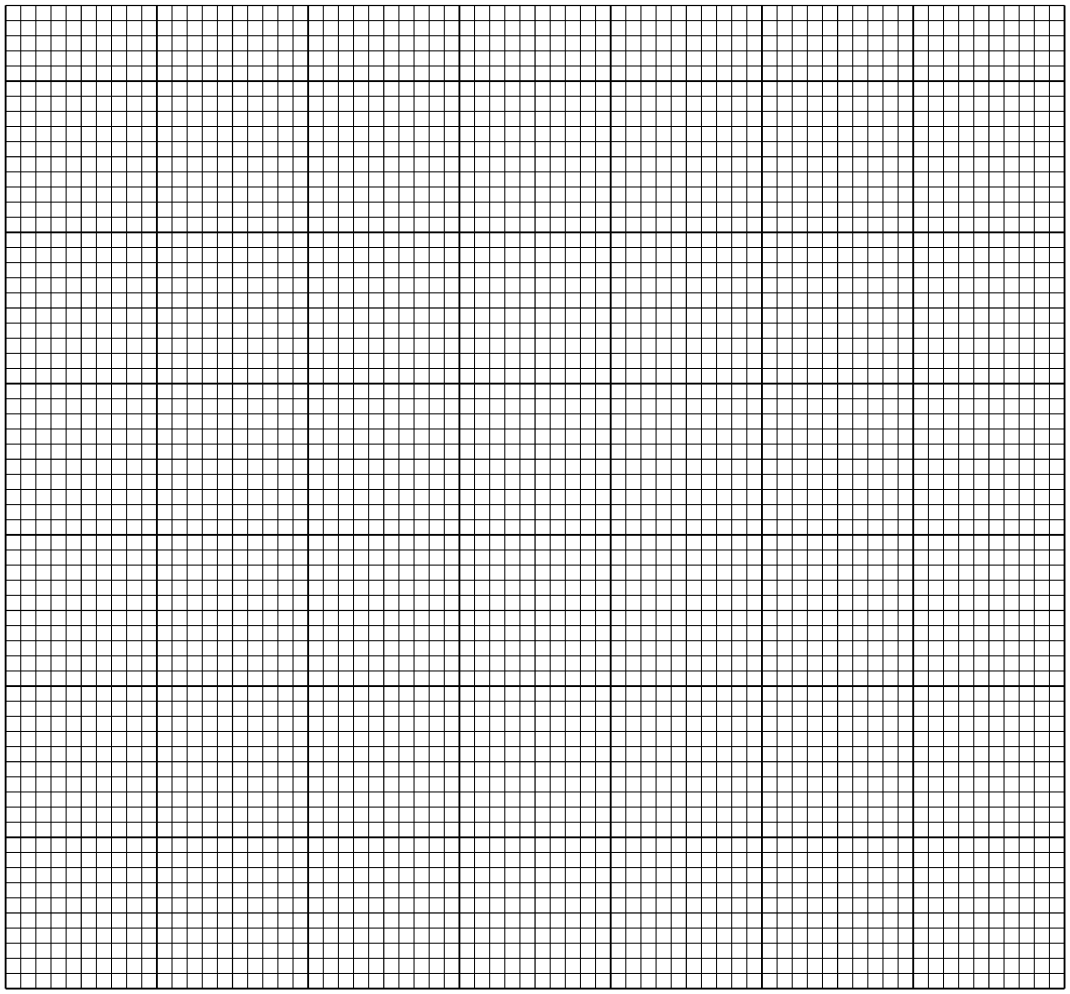
This document consists of **10** printed pages and **2** blank pages.

1 A mixture of flour, yeast and sugar was prepared using warm water. The mixture was placed in a measuring cylinder and its volume was measured at 2-minute intervals for 10 minutes. Table 1.1 shows the results obtained.

Table 1.1

Time (minutes)	0	2	4	6	8	10
Volume (cm^3)	30	38	53	62	69	81

(a) Plot a graph of the data in Table 1.1 in the grid.



[5]

(b) Use your graph to estimate the volume of the mixture at 7 minutes.

.....[1]

(c) Describe and explain the change in volume observed in the experiment.

.....

.....

.....

.....[2]

(d) **(i)** Explain why warm water was used in this experiment rather than boiling water.

.....

.....[2]

(ii) Describe a suitable control for this experiment

.....[1]

(e) Name one use of yeast in the food industry.

.....[1]

[Total: 12]

2 An investigation was carried out to determine if chlorophyll was needed for photosynthesis. Two leaves that were green in the middle and white on the edges were used. Fig. 2.1 shows one of the two leaves.

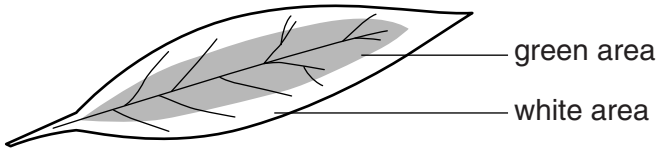


Fig. 2.1

(a) (i) State the term used to describe the type of leaf shown in Fig. 2.1.

.....[1]

(ii) One leaf was first destarched before it was picked from the plant.

Describe how a leaf can be destarched.

.....

.....

.....[2]

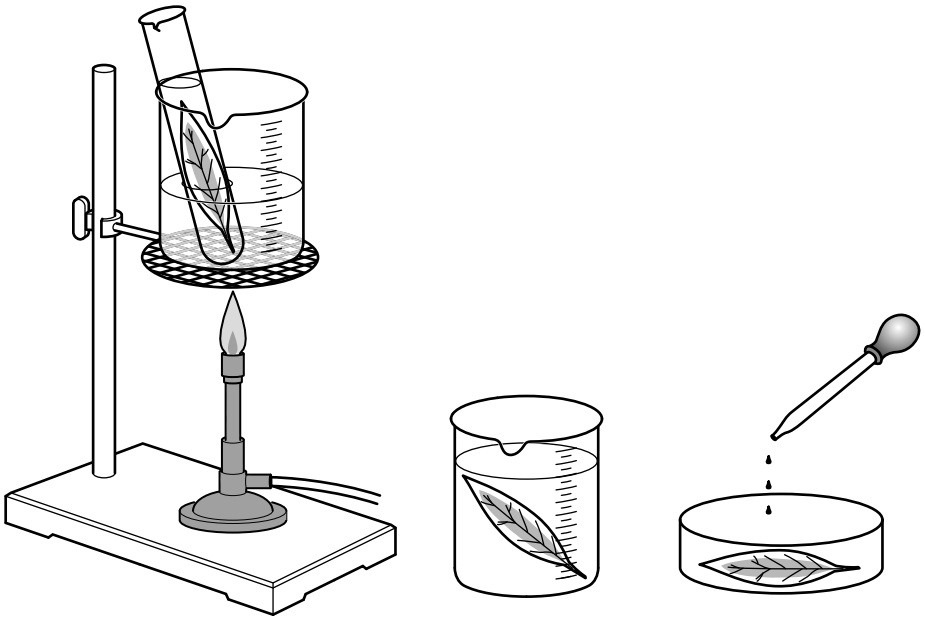
(iii) Explain why destarching one leaf was important for this investigation.

.....

.....

.....[2]

(b) Fig. 2.2 shows three stages of the test for starch in leaves.



step 1 **step 2** **step 3**

Fig. 2.2

(i) State what is taking place in each of the steps 1, 2 and 3.

Step 1

.....

.....

Step 2

.....

.....

Step 3

.....

.....[3]

(ii) Describe what would be observed on the leaf that had **not** been destarched after step 3 to show that chlorophyll is necessary for photosynthesis.

.....

.....[2]

(iii) State the role played by chlorophyll in photosynthesis.

.....[1]

(iv) State any other two factors that could affect the results observed in this investigation.

1 .....

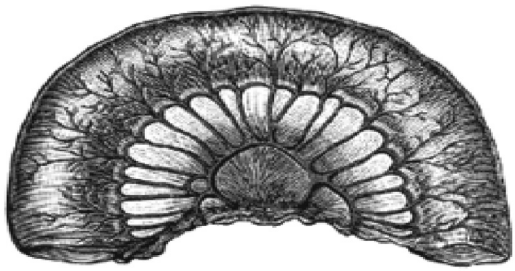
2 .....[2]

[Total: 13]

[Turn over

3 Fig. 3.1 shows pictures of part of two organs taken from the respiratory and digestive systems of an animal.

A



B

Fig. 3.1

(a) (i) Draw a large labelled diagram to show the external features of Fig. 3.1A.

[4]

(ii) Measure the diameter of the structure in Fig. 3.1A along the arrow line shown and measure the corresponding diameter on your drawing.

Diameter of Fig. 3.1A.

.....[1]

Diameter of your drawing.

.....[1]

(iii) Calculate the magnification of your drawing. Show your working.

Magnification .....[2]

(b) State two differences between the specimens shown in Fig. 3.1A and Fig. 3.1B, using a suitable table.

[4]

(c) (i) Identify and name the specimen shown in Fig. 3.1A.

.....[1]

(ii) State and explain one feature of the specimen shown in Fig. 3.1A that makes it suitable for its function.

feature .....

explanation .....

.....[2]

(d) A few drops of iodine solution were added to the cut surface of the specimen shown in Fig. 3.1B.

Describe and explain what would be observed on the surface of the specimen.

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.....

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.....[3]

[Total: 18]

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4 An investigation was carried out to determine the role of petals in pollination. 100 flowers with petals and 100 flowers without petals were used.

Fig. 4.1 shows the appearance of the flowers with and without petals.

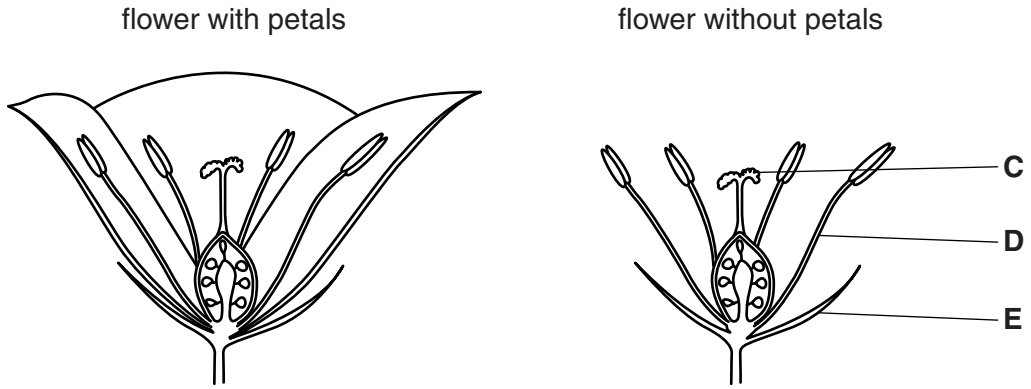

Fig. 4.1

After seven days it was observed that 92 of the flowers with petals were pollinated and only 20 of the flowers without petals were pollinated.

(a) Name parts **C**, **D** and **E**.

C .....

D .....

E .....[3]

(b) Describe and explain the differences observed in the pollination of the flowers with petals and those without petals.

.....

.....

.....

.....

.....[3]

(c) State two ways in which this investigation could be improved.

.....

.....

.....[2]

(d) Outline the stages that will lead to the formation of a seed and a fruit.

.....

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.....

.....[5]

(e) State and describe two ways of seed dispersal.

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.....

.....

.....[4]

[Total: 17]

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