

Candidate Name _____

Centre Number	Candidate Number

CAMBRIDGE INTERNATIONAL EXAMINATIONS
General Certificate of Education Ordinary Level

BIOLOGY

PAPER 3 Practical Test

5090/3

MAY/JUNE SESSION 2002

1 hour 15 minutes

Candidates answer on the question paper.

Additional materials:

As listed in Instructions to Supervisors

TIME 1 hour 15 minutes

INSTRUCTIONS TO CANDIDATES

Write your name, Centre number and candidate number in the spaces at the top of this page.

Answer **both** questions.

Write your answers in the spaces provided on the question paper.

Use a sharp pencil for your drawings. Coloured pencils or crayons should **not** be used.

INFORMATION FOR CANDIDATES

The intended number of marks is given in brackets [] at the end of each question or part question.

FOR EXAMINER'S USE	
1	
2	
TOTAL	

This question paper consists of 6 printed pages, 1 blank page and a Supervisor's Report.



1 (a) You are provided with three test-tubes, labelled **T1**, **T2** and **T3**.
The test-tubes contain different concentrations of a solution of a reducing sugar.

- (i) Test the contents of each tube for reducing sugar so that a fair comparison of the three solutions can be made.
Note any colour changes in Table 1.1.

You will need to keep the solutions for future reference.

Table 1.1

test-tube	colour change
T1	
T2	
T3	

[3]

- (ii) Describe, giving full experimental details, how you carried out the test for reducing sugar.

.....

[3]

- (iii) After comparing the results of your tests, state your conclusions about the concentration of each of the solutions.

T1
T2
T3[3]

- (iv) State two ways in which you ensured that the tests carried out on the sugar solutions, to enable you to compare them, were fair.

1.

 2.
[2]

(b) You are provided with samples **S1** and **S2**.

- (i) Remove sample **S1** from the dish and pat it dry with a paper towel. Place the sample on a tile and chop it into tiny pieces. Place the chopped pieces in a test-tube and cover with water to a depth of 4 cm. Label the test-tube **S1**.

Clean the tile and the scalpel.

Repeat the whole procedure with sample **S2**.

Test the contents of both test-tubes for reducing sugar.

Record your results in Table 1.2.

Table 1.2

test-tube	colour change
S1	
S2	

[2]

- (ii) Compare these results with those from **T1**, **T2** and **T3**.

State your conclusions about the concentrations of reducing sugar in **S1** and **S2**.

.....

[2]

- (iii) State the name of another type of stored food that would **not** give a positive result with the test that you have carried out.

Describe how you would test and recognise a positive result for this stored food.

stored food

test

.....

.....

positive result[3]

[Total : 18]

2 (a) You are provided with half a fruit, labelled **S3**.

(i) In the space below, make a large, labelled drawing of the cut surface of **S3**.

[7]

(ii) Draw a horizontal line through the widest part of your drawing.
Measure the width of your drawing along this line.

width of drawing[1]

(iii) Measure the equivalent width of specimen **S3**.

width of specimen

(iv) Calculate the magnification of your drawing.
Show your working clearly.

magnification[2]

(b) Fig. 2.1 is a photograph of a section through a different fruit, **S4**.



Fig. 2.1

Complete Table 2.1 to describe three visible differences and three visible similarities between **S3** and **S4**.

Table 2.1

	fruit S3	fruit S4
difference 1		
difference 2		
difference 3		
similarity 1		
similarity 2		
similarity 3		

[6]

(c) Remove a seed from specimen **S3**.

(i) Describe the surface of the seed.

.....
.....
.....[2]

(ii) The coating of the seed contains a chemical that prevents the seed from germinating until the coating has washed away.

Suggest how this may be of benefit to the plant.

.....
.....
.....[2]

(iii) Fruit **S3** is often eaten by animals.

Suggest how the fruit and the seeds are adapted for animal dispersal.

fruit

.....

seeds

.....[2]

[Total : 22]

SUPERVISOR'S REPORT

**The Supervisor or Teacher responsible for the subject is asked to answer the following questions.*

- 1 Was any difficulty experienced in providing the necessary materials? If so, give brief details.

- 2 Did the candidate experience any difficulty during the course of the examination? If so, give brief details. Reference should be made to
 - (a) difficulties arising from faulty specimens;
 - (b) accidents to apparatus or materials;
 - (c) any information that is likely to assist the Examiner, especially if this cannot be discovered from the scripts.

Declaration (to be signed by the Principal, and completed on the top script from the Centre)

The preparation of the practical examination has been carried out so as to fully maintain the security of the examination.

Signed

Name (in block capitals)

***Information that applies to all candidates need only be given once.**

N.B. If scripts are required by CIE to be despatched in more than one envelope, it is essential that a copy of the relevant Supervisor's Results (when requested), the Supervisor's Report and the appropriate seating plan are sent inside **each envelope**.