OCR
RECOGNISING ACHIEVEMENT

OXFORD CAMBRIDGE AND RSA EXAMINATIONS

Advanced GCE

BIOLOGY 2806/03/PLAN

Practical Examination 2 (Part A – Planning Exercise)

For issue on or after: Monday **17 NOVEMBER 2003**

Candidate Name	Centre Number	Candidate Number

TIME **This plan must be handed in by the deadline given by your teacher.**

IINSTRUCTIONS TO CANDIDATES

- Write your name in the space above.
- Write your Centre number and Candidate number in the boxes above.
- Attach this page to the front of your plan.

INFORMATION FOR CANDIDATES

- In this Planning Exercise, you will be assessed on the Experimental and Investigative skill:
  Skill P: Planning
- You will be awarded marks for the quality of your written communication.
- Detailed notes for guidance are given overleaf.

Authentication by teacher

I declare that, to the best of my knowledge, the work submitted is that of the candidate concerned. I have provided details on my Report Form for the Practical Test of any assistance given.

Signature ..... Date .....

FOR EXAMINER'S USE		
	Max.	Mark
Planning	16	

This question paper consists of 3 printed pages and 1 blank page.

Registered Charity Number: 1066969
[Turn over

Notes for guidance

1 Your plan should have a clear and helpful structure and should be illustrated by diagrams, tables, charts, graphs etc. as appropriate. Remember that these can often be used to replace words in the text. Diagrams should be relevant to the content of your plan and positioned appropriately. Labels on diagrams, flow charts or tables should be clear and concise. Large blocks of text should be included in the word count.

2 You should take care to use technical and scientific terms correctly and to write in clear and correct English.

3 Your plan should be hand-written or word-processed on A4 paper, which should have a hole punched at the top left hand corner. Pages should be numbered and should have a clear margin on the right hand side. You should write (or print) on one side of the paper only and each sheet should be marked with your Centre number and Candidate number.

4 You should show that you have consulted an appropriate range and variety of sources. At the end of your plan, you should list clearly the sources you have used and you should refer to these references in your plan where appropriate. Where you have incorporated material which has been copied directly from a source such as a book or the Internet, this must be acknowledged in your plan and details included in the references at the end. However, it should be noted that the inclusion of copied material will not in itself gain credit. The list of references should not be included in the word count.

5 Your plan should be based on the use of standard equipment, apparatus, chemicals and other materials available in a school or college science laboratory.

6 Your plan should be of between 500 and 1000 words. A plan that is in excess of 1000 words is likely to have poor structure and unselective choice of material, so that full credit may not be available. You should indicate the number of words in the margin of the plan at approximately 200 word intervals.

7 When you have finished, tie the pages **loosely** together, with this sheet on the top, so that the pages turn over freely, or use a treasury tag. Your Centre will give you the date by which your plan must be handed in.

Planning Exercise

This planning exercise is about the uptake of glucose by cells.

Glucose is absorbed across the cell surface membrane (plasma membrane) of most cells. A convenient way to investigate this is to use a solution of glucose and a suspension of yeast cells. The amount of glucose taken up from the glucose solution by yeast cells in a fixed length of time can be measured. At the end of the fixed length of time, further uptake of glucose is prevented by transferring the yeast suspension to a boiling water bath to kill the yeast cells. If the suspension is then left to stand, the yeast cells form a sediment at the bottom of the tube. The concentration of glucose that remains in the fluid (supernatant) above the sediment can then be determined. As the original concentration of glucose is known, the rate of uptake can be determined.

You are required to plan an investigation to find out if the rate of glucose uptake by yeast cells varies with glucose concentration.

The glucose concentration of a solution may be determined using a quantitative Benedict's test in which the solution is boiled with excess Benedict's reagent. The mixture is filtered through dried and weighed filter paper and the mass of the precipitate determined. There is a direct relationship between the concentration of glucose and the mass of precipitate.

Assume that you have access to:

- 10% glucose solution
- distilled water
- yeast suspension
- Benedict's reagent
- your school or college laboratory resources.

Give full details of your plan, including:

- the apparatus and materials to be used;
- a detailed method, which includes the procedures that you would adopt to ensure that the results obtained would be as precise and reliable as possible.

Indicate briefly how you would present and analyse your data to draw your conclusions.

You are strongly recommended to consult the descriptors for Skill P on page 109 of the Biology specification.

In this Planning Exercise, you will be assessed on the quality of your written communication.

[14]

Quality of Written Communication [2]

[Total : 16]