

OXFORD CAMBRIDGE AND RSA EXAMINATIONS

Advanced GCE

BIOLOGY

2806/03/INST

INSTRUCTIONS for the Planning Exercise and Practical Test

To be opened immediately

Planning Exercise – for issue on or after:

Monday **17 NOVEMBER 2003**

Practical Test:

Tuesday **27 JANUARY 2004** Morning 1 hour 30 minutes

This document is for the **Head of Centre** and for the use of the **Biology teacher and/or technician** who prepares the apparatus and materials for the examination.

A packet containing **two** copies of the Biology Practical Test, 2806/03/TEST, accompanies the packet containing these instructions.

These packets should be issued to the Biology teacher immediately they arrive at the Centre, but they **must be kept in a secure place at all times**.

These documents are provided so that the Biology teacher and/or technician can ensure that the Centre's apparatus and chemicals are suitable for carrying out the Biology Practical Test.

Great care should be taken that any confidential information given here does not reach the candidates, either directly or indirectly.

These instructions consist of 6 printed pages and 2 blank pages.

PLANNING EXERCISE

The Planning Exercise should be issued to candidates on or after the date shown on the front of this document. The candidates' plans must be collected in, on or before the date of the Practical Test. These arrangements may be made at the discretion and convenience of the Centre.

It should be recognised that each Planning Exercise makes only a small contribution to the overall assessment and candidates should therefore be guided to spend an appropriate amount of time on the work. It is suggested that they should be given between 7 and 10 days to complete it.

The mark scheme for the Planning Exercise is based closely on the coursework mark descriptors for Skill P given in the specification and a copy of these descriptors should be made available to candidates to assist them in their work.

Candidates may be given access, if they request it, and at the discretion of the Centre, to laboratory space and facilities in order to be able to carry out preliminary work which will help in constructing their plan. However, it should be noted that the responsibility for Health and Safety during this period rests with the Centre, and the attention of teachers is drawn to the Health and Safety section in the specification. Access to suitable library and other resources may also be required and, while time at home or in private study will be necessary to complete the task to a high standard, sufficient work must be completed under direct supervision to allow the teacher to authenticate the work with confidence as that of the candidates concerned. Many Centres find that this can best be managed by allowing candidates a set period of time to research the topic but requiring the Plan to be written under supervision. The supervising teacher should complete the statement of authentication for each candidate on the front cover page of the Plan. Details should be provided on the Report Form for the Practical Test of any assistance given to candidates. The Report Form can be found on the back page of the candidates' Practical Test papers.

After candidates' work has been collected, it must be kept securely until the date of the Practical Test (or must be collected on the day of the Practical Test) and must be included with the scripts for the Practical Test when these are despatched to the Examiner. Please tie together **loosely** the Planning Exercise and Practical Test for each candidate (or use a treasury tag), with the **Practical Test on the top**.

The following notes for guidance are issued to candidates

- 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 which 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

If candidates wish to try out the procedure they should be provided with the following:

- 1 10% glucose solution. This can be made up by adding 10 g of glucose to 100 cm³ of distilled water.
- 2 Distilled water.
- 3 Yeast suspension made up by mixing 10 g of dried yeast with 100 cm³ of water; leave for up to 30 minutes at room temperature before use.
- 4 Standard Benedict's reagent (quantitative Benedict's reagent is not necessary).
- 5 Fine filter paper.
- 6 Electronic balance.

PRACTICAL TEST

General Instructions

The Biology teacher and/or technician should be granted access to the question paper well in advance of the Practical Test in order to be satisfied that the apparatus and materials are provided in accordance with these instructions and are fully suitable for the performance of the experiments. To this end, the Biology teacher and/or technician **must** perform Questions 1 and 2 of the Practical Test and be satisfied that the candidates will be able to collect suitable results with the apparatus and materials listed in these instructions.

The Biology teacher and/or technician should also check **all** the slides supplied by OCR.

If the apparatus or materials that are provided to candidates differ significantly from these instructions, then full details of the changes must be given on the Report Form. Candidates will not be disadvantaged provided that the nature of the experiments has not been changed. Supervisors are advised to contact OCR well before the date of the examination if, for example, there are difficulties with obtaining materials or particular pieces of apparatus.

The Biology teacher and/or technician must perform the experiments well in advance of the examination, using the same equipment and materials as used by the candidates. A sample set of results, in the same format as that expected of the candidates, should be submitted to the Examiner on top of the candidates' scripts.

Candidates should be informed that, if they find themselves in real difficulty, they may ask the Supervisor for assistance but that the extent of this assistance will be reported to the Examiners, who may make a deduction of marks. If the Supervisor becomes aware that a candidate is having difficulty, then the Supervisor is expected to give the minimum amount of help required to enable the candidate to obtain a set of results from the apparatus. A note of the type of help given should be made on the Report Form on the last page of the candidate's script. **Under no circumstances should help be given to candidates with the presentation or analysis of experimental data.**

The Supervisor should intervene if he or she feels that a candidate is working in an unsafe manner. A **brief report** of the circumstances of any such intervention **must** be sent to the Examiner, attached to the front of the candidate's script.

In cases of faulty apparatus (not arising from a candidate's mishandling) which prevents the required readings from being taken, extra time must be allowed so that the candidate has a fair opportunity of performing the experiment as though the fault had not been present. Details of such cases of time compensation should be given on the Report Form.

Cases of individual hardship, e.g. illness or temporary disability, should be reported direct to OCR on the 'Special Considerations' form and **not** included on the Report Form.

Attention is drawn to the section on Health and Safety on pages 106 and 107, in Appendix B, of the second edition of the specification. This covers the Practical Test as well as coursework. Centres are reminded that, in UK law, the responsibility for Health and Safety lies with the employer.

Materials used in the examination should display appropriate hazard symbols.

Each candidate must be provided with the following apparatus and materials:

Question 1

- (i) 100 cm³ of 10% glucose solution in a beaker labelled **10% glucose**.
- (ii) 100 cm³ of distilled water in a beaker labelled **distilled water**.
- (iii) 100 cm³ of 1 M sulphuric acid in a container labelled **1 M sulphuric acid** and labelled **IRRITANT** ~~X~~_t
- (iv) 50 cm³ of 0.05% potassium manganate(VII) in a beaker labelled **potassium manganate**.
- (v) 25 cm³ of 3% glucose with a trace* of yellow food colouring in a beaker labelled **U**.
- (vi) 4 x 10 cm³ syringes marked in 1 cm³ gradations.
- (vii) Five test-tubes labelled **A** to **E**. (Check that they will hold 20 cm³.)
- (viii) Test-tube rack.
- (ix) A beaker of distilled water for washing and a container for waste water.
- (x) Stop watch / clock / appropriate timer.
- (xi) Glass rod.
- (xii) Eye protection.

* Check that 10 cm³ of this solution and 5 cm³ of 1 M sulphuric acid are pink/purple on adding 2 cm³ of potassium manganate(VII). If not, or if the mixture appears yellow, remake solution U using less food colouring.

Question 2

Candidates must have access to a microscope with low power and high power objectives (e.g. x 10 and x 40). Each candidate must have sole use of a microscope for at least 30 minutes.

- (i) Slide **S**.

Since slides are shared, some candidates may need to start with Question 2.

To be supplied by OCR

Slide **S**.

RETURN OF EXAMINATION MATERIALS TO OCR

Please read the following instructions carefully.

Immediately after the examination the slides must be returned to OCR in the containers in which they were received, using the self-adhesive labels for the parcel; they must not be included in parcels of scripts. On occasion, it may be possible for OCR to offer certain slides used in the examination for sale to Centres. In this case, an Order Form will be enclosed with the materials sent from OCR for the examination. Slides and containers not returned in good condition will be charged at the rate of £3 per item.

The address for the return of slides is:

UCLES Laboratory
Combine House
Harvest Way
Cambridge
CB1 2RA

Please clearly indicate your Centre number when returning slides.