OCR
RECOGNISING ACHIEVEMENT

OXFORD CAMBRIDGE AND RSA EXAMINATIONS
Advanced GCE

CHEMISTRY **2816/03/PLAN**

Practical Test (Part A – Planning Exercise)

For issue on or after: Friday **15 MARCH 2002**

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

Candidate Name	Centre Number	Candidate Number

INSTRUCTIONS 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 P: Planning.
- You will be awarded marks for the quality of your written communication.
- Use of the *Data Sheet for Chemistry* is allowed.
- Detailed notes for guidance are given overleaf.

FOR EXAMINER'S USE		
	Max.	Mark
Planning	16	

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 .....

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

SP (SM/KN) S23822/3

Registered Charity Number.1066969

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 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 the report 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 it must be handed in.

The Planning Exercise

You are provided with the following task.

To identify some organic compounds containing oxygen.

You are provided with a number of different organic compounds.
Each compound contains:
- **three** carbon atoms;
- **six** or **eight** hydrogen atoms;
- **one** or **two** oxygen atoms;
- **no** atoms of any other element.

First, choose **six** different compounds which have the composition given.
You must choose compounds which are alcohols, carbonyl compounds, carboxylic acids or esters.

Then devise a sequence of **chemical** reactions by which your six compounds could be distinguished from each other and identified.
You may only use physical properties if you need to confirm the identity of a product from a chemical reaction.
Negative chemical tests are acceptable, provided that they are conclusive.

Give chemical equations and necessary conditions for the reactions you describe.
State the observations you would expect to make in each test. **[16 marks]**

*Reference to use of spectroscopy (mass spectrometry, infra-red or n.m.r.) is **not** allowed in any part of your plan.*

Your plan should include the following:

- relevant chemical knowledge and understanding from the AS and A2 parts of your chemistry course;
- a list of apparatus and chemicals needed;
- a detailed method which provides full instructions about how the tests should be carried out;
- how you would interpret the observations obtained;
- safety precautions and risk assessments.

Any quotations direct from the work of others should be acknowledged by quotation marks, with page references, and the sources should be included in the bibliography.

Quality of Written Communication will be assessed in your work for Skill P.