

Candidate Forename						Candidate Surname					
Centre Number						Candidate Number					

OXFORD CAMBRIDGE AND RSA EXAMINATIONS
ADVANCED GCE
2816/03/PLAN
CHEMISTRY

Practical Examination 2 (Part A – Planning Exercise)

For issue on or after: 13 MARCH 2010

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

SUITABLE FOR VISUALLY IMPAIRED CANDIDATES

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 _____

READ INSTRUCTIONS OVERLEAF

INSTRUCTIONS TO CANDIDATES

- **Write your name clearly in capital letters, your Centre Number and Candidate Number in the spaces on the first page.**
- **Use black ink. Pencil may be used for graphs and diagrams only.**
- **Attach these pages 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 opposite.**

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 be 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. 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 500–1000 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 (or use a treasury tag), with this sheet on the top, so that the pages turn over freely. Your Centre will give you the date by which your Plan must be handed in.**

NOTICE TO CANDIDATE

The work you submit for assessment must be your own.

If you copy from someone else or allow another candidate to copy from you, or if you cheat in any other way, you may be disqualified from at least the subject concerned.

- 1 Any help or information you have received from people other than your subject teacher(s) must be clearly identified in the work itself.**
- 2 Any books, information leaflets or other material (e.g. videos, software packages or information from the Internet) which you have used to help you complete this work must be clearly acknowledged in the work itself. To present material copied from books or other sources without acknowledgement will be regarded as deliberate deception.**

DECLARATION BY CANDIDATE

I have read and understood the NOTICE TO CANDIDATE (opposite). I have produced the work without any help from other people apart from that which I have declared in the work itself. I have acknowledged all source materials in the work itself.

Candidate's signature: _____

Date: _____

PLANNING EXERCISE

In this Planning Exercise, two marks are available for the quality of your written communication.

You are to write a Plan to identify some liquids.

You are provided with six bottles which contain pure colourless liquids.
However, the labels have come off and the bottles have become mixed up.

The bottles contain the following liquids:

- propan-1-ol
- 2-methylpropan-2-ol
- propanal
- propanone
- propanoic acid
- iodopropane

Describe a logical sequence of **CHEMICAL REACTIONS** that would enable you to identify all six liquids.

You must describe a **DIFFERENT** positive test for each of the six liquids.

Use of physical properties (such as the measurement of boiling points) or using spectroscopy (mass spectrometry, infra-red or n.m.r.) is **NOT** allowed.

[16 marks]

Your Plan should include the following:

- **relevant chemical knowledge and understanding from both the AS and A2 part of your chemistry course;**
- **a flow chart;**
- **conditions under which your tests would be carried out (including appropriate quantities of the reactants used) and observations you would make in your reactions;**
- **a balanced chemical equation and a brief explanation for each positive test;**
- **a relevant hazard AND safety precaution for the reaction that you consider to be the most hazardous.**

All 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.

[14]

Quality of Written Communication [2]

[Total: 16]

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