



General Certificate of Education  
Advanced Level Examination  
June 2010

**Chemistry**

**CHM6T/P10/TN**

Unit 6T A2 Investigative Skills Assignment

**Teachers' Notes**

**Confidential**

A copy should be given immediately to the teacher(s) responsible for  
GCE Chemistry

**Teachers' Notes****Confidential**

These notes must be read in conjunction with *Instructions for the Administration of the Investigative Skills Assignment: GCE Chemistry* on the ISA disk and published on the AQA Website.

**The identification of an organic compound**

The aim of this task is to identify an organic compound by a series of observation exercises.

**Materials**

Each candidate should be provided with the following reagents in suitable closed containers.

| Reagents                 | Concentration   | Volume             | Note  |
|--------------------------|---|--------------------|---|
| Potassium manganate(VII) | for each dm <sup>3</sup> of reagent solution add 250 cm <sup>3</sup> of 0.02 mol dm <sup>-3</sup> potassium manganate(VII) to 750 cm <sup>3</sup> of 1.0 mol dm <sup>-3</sup> sulfuric acid | 10 cm <sup>3</sup> | Labelled ' <b>Potassium manganate(VII)</b> '  |
| Methyl orange            | standard indicator  |                    | Labelled ' <b>Methyl orange</b> '<br>Individual supply not required                               |
| Sodium hydrogencarbonate | approximately 5 g of solid  |                    | Labelled ' <b>Sodium hydrogencarbonate</b> '  |
| Methanoic acid           | approximately 3 mol dm <sup>-3</sup>  | 10 cm <sup>3</sup> | Two samples;<br>one sample labelled ' <b>X</b> '<br>one sample labelled ' <b>Methanoic acid</b> ' |
| Ethanoic acid            | approximately 1 mol dm <sup>-3</sup>  | 10 cm <sup>3</sup> | Labelled ' <b>Ethanoic acid</b> '   |
| Methanol                 | approximately 1 mol dm <sup>-3</sup>  | 10 cm <sup>3</sup> | Labelled ' <b>Methanol</b> '  |

**General**

Reagents of good analytical quality should be used and spare supplies of all solutions specified in these notes must be available.

**Apparatus**

| Number | Apparatus   |
|--------|---|
| 4      | test tube   |
| 7      | dropping pipette  |
| 1      | test tube rack  |
| 1      | small spatula   |
| 1      | 250 cm <sup>3</sup> beaker  |
|        | hot water is needed for part of the task. Centres are advised to provide an <b>electric kettle</b> to provide a convenient and quick supply of hot water. Alternatively, each candidate will need a <b>tripod</b> , <b>gauze</b> and <b>Bunsen burner</b> . |
|        | a plentiful supply of purified water (either distilled or de-ionised)   |
|        | suitable eye protection   |

### **Teacher Result**

A teacher must carry out the Task, using the same stock solutions, in order to obtain a series of observations. Teacher observations are required for **each** group of candidates. The teacher's observations, along with the Teacher Group, must be recorded in the space provided on the Teacher Results Sheet. These observations may be needed by the teacher to assess the accuracy of the candidate's results. The teacher must **not** carry out the task in the presence of the candidates.

In order to ensure that the appropriate Teacher Result can be matched with each candidate, teachers must ensure that candidates complete all the boxes on the Candidate Results Sheet, including 'Teacher Group'.

The Teacher Results Sheets must be included with the sample sent to the moderator.

### **Centres with more than one teaching set**

Centres may wish to divide their candidates into manageable groups and to conduct the task at different times.

**One week before taking Stage 1 of the ISA teachers may give their candidates the following information.**

The aim of this task is to identify an organic compound by a series of observation exercises.

There should be no further discussion of this topic.

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**ISA CHM6T/P10 Teacher Results Sheet**Centre Number 

|  |  |  |  |  |
|--|--|--|--|--|
|  |  |  |  |  |
|--|--|--|--|--|

Teacher Name ..... Teacher Group .....

**Results**

Record your observations in an appropriate table in the space below.