

Centre Number						Candidate Number				
Surname										
Other Names										
Candidate Signature										

For Examiner's Use Total Task 1



General Certificate of Education  
Advanced Level Examination  
June 2014

# Chemistry

# CHM6X/PM1

Unit 6X A2 Externally Marked Practical Assignment

## Task Sheet 1

To be completed before Task Sheet 2

For submission by 15 May 2014

**For this paper you must have:**

- a ruler
- a calculator.

### An investigation of an iron(II) salt

A chemist prepared crystals of an iron(II) salt by an unusual method and investigated some properties of this salt. The first experiment was to find out how the salt reacts with potassium manganate(VII).

The chemist made a solution of the iron(II) salt by dissolving 5.60 g of the crystals in a small volume of dilute sulfuric acid. This solution was made up to 250 cm<sup>3</sup> using deionised water. This is given to you as solution **X** for Task 1.

You are to titrate solution **X** for Task 1 with the 0.0200 mol dm<sup>-3</sup> potassium manganate(VII) solution provided.

#### Procedure

- **Wear eye protection at all times.**
  - **Assume that all solutions are toxic and corrosive.**
- 1 Rinse a burette with a small amount of the potassium manganate(VII) solution. Set up the burette and use a funnel to fill it with the potassium manganate(VII) solution. Record the initial burette reading in a table of your own design on the Candidate Results Sheet for Task 1.
  - 2 Pour a small amount of solution **X** for Task 1 into a clean 100 cm<sup>3</sup> beaker. Use a pipette filler to rinse a pipette with this solution. Use this pipette to transfer 25.0 cm<sup>3</sup> of this solution to a 250 cm<sup>3</sup> conical flask.
  - 3 Use a measuring cylinder to transfer approximately 20 cm<sup>3</sup> of dilute sulfuric acid to the conical flask. Swirl the flask.
  - 4 Add potassium manganate(VII) solution from the burette until the solution in the conical flask just turns pink. Record your final burette reading in your table.
  - 5 Rinse the conical flask with distilled or deionised water and repeat the titration until you obtain **two** titres that are concordant. You should do no more than five titrations.

**Have one of your final burette readings checked by your teacher.**

- 6 Calculate and record the average titre on the Candidate Results Sheet for Task 1. Show clearly the titres used in calculating this average titre.

You are **not** required to carry out any further calculations on the Candidate Results Sheet for Task 1.

You will use your results in **Section A** of the Written Test.

**Candidate Results Sheet for Task 1**

Teacher Group .....

**Results**

Record your titration results in an appropriate table in this space.

**[7 marks]**Average titre / cm<sup>3</sup> .....

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C		A	

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**There are no questions printed on this page**

**DO NOT WRITE ON THIS PAGE  
ANSWER IN THE SPACES PROVIDED**