UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

GCE Ordinary Level

MARK SCHEME for the November 2005 question paper

5070 CHEMISTRY

5070/03 **Paper 3** **maximum raw mark 40**

This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which Examiners were initially instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began. Any substantial changes to the mark scheme that arose from these discussions will be recorded in the published *Report on the Examination*.

All Examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes must be read in conjunction with the question papers and the *Report on the Examination*.

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1 20 marks

(a) Identification of the acid

Test 1 Effervesces (1)

Gas pops with a lit splint (1)

Hydrogen evolved (1)

Test 2 No reaction (1)

Test 3 White ppt (1)

Acid is hydrochloric acid (1)

(b) Titration (12)

4 marks for each of two titration results within 0.2 cm^3 of the Supervisor's value.

2 marks for results within 0.3 cm^3 etc

No marks for results more than 0.4 cm^3 from the supervisor's value

Maximum of 3 marks for concordance, i.e. results within 0.2 cm^3

1 mark for taking a correct average

(c) concentration of acid in mol/dm^3 (2)

2 **20 marks** **S** is aluminium chloride
T is lead nitrate
U is silver nitrate

Solution **S**

Test 1	White ppt	(1)
	Soluble in excess sodium hydroxide	(1)
	Colourless solution	(1)
	Insoluble in excess ammonia	(1)
Test 2	No reaction	(1)
Test 3	No reaction	(1)

Solution **T**

Test 1	White ppt	(1)
	Soluble in excess sodium hydroxide	(1)
	Colourless solution	(1)
	Insoluble in excess ammonia	(1)
Test 2	White ppt	(1)
Test 3	Yellow ppt	(1)

Solution **U**

Test 1	brown ppt	(1)
	Insoluble in excess sodium hydroxide	(1)
	Soluble in excess ammonia	(1)
	Colourless solution	(1)
Test 2	White ppt	(1)
Test 3	pale yellow ppt	(1)

Conclusion

Any two of **S** is Al^{3+}, **T** is Pb^{2+}, **U** is Ag^{+} (2)