

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

GCE O Level

MARK SCHEME for the May/June 2006 question paper

5070 CHEMISTRY

5070/03

Paper 3

maximum raw mark 40

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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.

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1 16 marks

(a) titration [12]

4 marks for each of two titration results within 0.2 cm³ of the Supervisor's value.
3 marks for results within 0.3 cm³ etc.

no marks for results more than 0.5 cm³ from the supervisor's value

maximum of 3 marks for concordance, i.e. results within 0.2 cm³

1 mark for taking a correct average

(b) concentration of X [2]

method (1) answer (1)

(c) M_r of X [2]

method (1) answer (1)

2 24 marks

Solid R (manganese(IV) oxide)

Test 1	effervesces	[1]
	gas relights a glowing splint	[1]
	oxygen produced	[1]
	exothermic reaction	[1]
	solid is insoluble (or appears unchanged)	[1]

Test 2	effervesces	[1]
	gas bleaches litmus	[1]
	chlorine produced	[1]
	brown solution	[1]

Solution S (manganese(II) sulphate)

Test 3	beige ppt/pale brown	[2]
	insoluble in excess	[1]
	darkens on the surface	[1]
	brown ppt	[1]
	effervesces	[1]
	gas relights a glowing splint or oxygen produced	[1]

Test 4	no reaction	[1]
	no reaction	[1]

Test 5	white ppt	[1]
	insoluble in acid	[1]

Test 6	brown ppt	[1]
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Conclusion

In Test 1 R is a catalyst [1]

In Test 2 R is an oxidising agent [1]

The anion is a sulphate [1]

Any 24 marks to score.