



Cambridge Assessment International Education
Cambridge Ordinary Level

CHEMISTRY

5070/32

Paper 3 Practical Test

October/November 2017

MARK SCHEME

Maximum Mark: 40

Published

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Question	Answer	Marks
1(a)	Titration Measurements (1) Both readings i.e. initial and final are present for each titration, readings are recorded to 1dp, no reading is in excess of 50.0 and no initial reading is given as 50.0 Titres (1) All the titres are calculated correctly i.e. no subtraction errors Accuracy (6) For the two best titres give: 3 marks for a titre within 0.2cm^3 of the Supervisor's value 2 marks for a titre within 0.3cm^3 of the Supervisor's value 1 mark for a titre within 0.4cm^3 of the Supervisor's value Concordance (3) Give 3 marks if all the ticked values are within 0.2cm^3 Give 2 marks if all the ticked values are within 0.3cm^3 Give 1 marks if all the ticked values are within 0.4cm^3 Average (1) Give 1 mark if the candidate calculates a correct average of selected titres	12
1(b)	Pipette volume = 25cm^3 and assuming average volume of P used = 20.4cm^3 Concentration of sulfuric acid in P in mol/dm^3 = $(25.0 \times 0.586) / (20.4 \times 2)$ (1) = 0.359 (1)	2
1(c)	Moles of sulfuric acid in 10cm^3 of concentrated acid = (b) / 2 = $0.359 / 2$ = 0.180	1
1(d)	Concentration of concentrated sulfuric acid in mol/dm^3 = (c) $\times 100$ = 0.180×100 = 18.0	1
1(e)	Mass of sulfuric acid in 1dm^3 of concentrated sulfuric acid in g = (d) $\times 98$ = 18.0×98 = 1760	1

Question	Answer	Marks
General points R is aluminium chloride S is copper(II) chloride For gases: to gain credit for the name of the gas produced, the test must be at least partially correct. Solutions: colourless is not equivalent to clear and clear is not equivalent to colourless No credit is given for conclusions based upon incorrect observations.		
2 R (test 1)	(a) white ppt (1) (b) (ppt) dissolves / soluble (in excess) (1) colourless solution (1)	21
2 R (test 2)	(a) white ppt (1) (b) (ppt) remains / insoluble (in excess) (1) (c) no reaction (1)	
2 R (test 3)	(a) no reaction (1) (b) no reaction (1) (c) white ppt (1)	
2 S (test 1)	(a) blue ppt (1) (b) (ppt) remains / insoluble (in excess) (1)	
2 S (test 2)	(a) blue ppt (1) (b) (ppt) dissolves / soluble (in excess) (1) dark blue solution (1) (c) bubbles (1) gas relights a glowing splint (1) oxygen (1) (liquid) turns darker (1)	
2 S (test 3)	(a) no reaction (1) (b) no reaction (1) (c) white ppt (1)	

Question	Answer	Marks
Conclusions	R is aluminium chloride / $AlCl_3$ / $Al^{3+} Cl^-$ (1) Evidence: Test 1 white ppt which dissolves in excess, Test 2 white ppt which does not dissolve in excess and Test 3 correct in (a),(b) and (c) S is copper(II) chloride / $CuCl_2$ / $Cu^{2+} Cl^-$ (1) Evidence: Test 1 blue ppt which does not dissolve in excess, Test 2 blue ppt which dissolves in excess and Test 3 correct in (a), (b) and (c)	2