

**CAMBRIDGE INTERNATIONAL EXAMINATIONS**

Cambridge International General Certificate of Secondary Education

## **MARK SCHEME for the October/November 2014 series**

### **0620 CHEMISTRY**

**0620/61**

Paper 6 (Alternative to Practical), maximum raw mark 60

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- 1 (a) boxes completed to show stirrer / glass rod (1) [2]  
 watchglass / evaporating dish (1)
- (b) to speed up the reaction (1) [1]
- (c) correct answer 4.2 g (2) [2]  
 if incorrect, evidence of 17.8 – 13.6 (1)
- (d) (i) solid / lead oxide visible / remaining (1) [1]  
**do not allow:** mention of precipitate
- (ii) filtration (1) [1]
- (iii) excess (1) [1]  
**allow:** residue
- (e) Any **two** from:  
 evaporation / steam (1)  
 solid / crystals formed (1)  
 breakdown / decomposition of solid (1) [2]
- 2 (a) smooth curve missing anomalous point (1) [1]
- (b) **composition of mixture**  
 double volume / 100 cm<sup>3</sup> of hydrogen peroxide (1)  
 more than 1 g of manganese(IV) oxide / powdered (1) [2]  
**ignore:** references to water  
**note:** double the concentration is valid for (2)
- explanation**  
 double volume of gas (1)  
 faster reaction (1) [2]
- (c) catalyst / increase the rate of the reaction (1) [1]
- (d) sketch graph less steep than original for Experiment 1 (1)  
 to same level (1) [2]
- 3 (a) (i) chromatography (1) [1]
- (ii) to prevent loss / evaporation of solvent (1) [1]
- (b) when the solvent is near the top of the paper / before the solvent reaches the top of the paper (1) [1]

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- (c) (i) 4 (1) [1]
- (ii) yes, one artificial dye (1)  
at same height / matches (1) [2]
- 4 (a) table of results for Experiment 1  
initial volume completed correctly (1)  
0 or 24.4  
all readings to 1 decimal place (1) [2]
- (b) table of results for Experiment 2  
final volume completed correctly (1)  
6.1  
difference correct (1) [2]
- (c) (i) neutralisation (1) [1]  
**allow:** acid-base
- (ii) as an indicator / to show end point (1) [1]
- (d) water to remove the solution A of acid (1)  
acid B to remove traces of water (1) [2]
- (e) (i) Experiment 1  
ecf from readings (1) [1]
- (ii) any correct comparison (1) [1]
- (iii) solution B more concentrated / stronger (1) or converse  
less volume was needed (1) [2]
- (f) half value from table result for experiment 2 (1)  
cm<sup>3</sup> (1) [2]
- (g) advantage: easy to use / quick / convenient (1)  
disadvantage: not accurate owtte (1) [2]
- (h) same volume of each solution (1)  
add suitable reactant (1)  
expected observation (1)  
comparison (1) [4]  
**note:** e.g. 10 cm<sup>3</sup> of each acid (1), add strip of magnesium / named carbonate (1)  
effervescence (1), more rapid bubbles means stronger acid (1)

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- 5 (c) no reaction / no change / no precipitate (1) [1]
- (d) white (1)  
precipitate (1) [2]
- (e) transition metal present (1)  
**allow:** iron  
water / hydrated (1) [2]
- (f) hydrated (1) iron (1) (II) (1) (sulfate) [3]
- 6 (a) (i) gas syringe / inverted measuring cylinder in trough of water (1)  
labelled (1) [2]
- (ii) limewater (1)  
milky (1) [2]
- (b) measured volume of water (1)  
in named weighed container (1)  
evaporate to dryness (1)  
reweigh / measure mass of solid (1)  
conclusion: e.g. double the mass of residue if 500 cm<sup>3</sup> water used to check mass in  
1000 cm<sup>3</sup> (1) max [4]