

**UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS**

**International General Certificate of Secondary Education**

**MARK SCHEME for the May/June 2012 question paper  
for the guidance of teachers**

**0620 CHEMISTRY**

**0620/63**

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

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

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- 1 (a) teat/dropping pipette/dropper (1) **allow:** pipette [1]
- (b) crushed ore would have larger surface area (1)  
more zinc oxide would have formed/faster decomposition (1) [2]
- (c) sulfuric (1) [1]
- (d) filtration (1) [1]
- (e) add magnesium (1) **allow:** electrolysis [1]
- [Total: 6]**
- 2 bromine (water) (1) not: bromide  
colourless (1)  
aqueous silver nitrate (1)  
yellow precipitate (1)  
named indicator/solution of copper salt (1)  
correct colour change/pH/blue precipitate (1) [6]
- [Total: 6]**
- 3 (a) volumes completed correctly  
0, 30, 45, 52, 56, 54, 60, 60 –1 for each incorrect [3]
- (b) points plotted correctly (3) –1 for each incorrect  
smooth curve (1) [4]
- (c) point at 100 seconds/54 cm<sup>3</sup>/point 6 (1) off curve/owtte (1) [2]
- (d) 20 cm<sup>3</sup> ±½ small square (1) indication on graph (1) [2]
- (e) reaction finished/all peroxide decomposed owtte (1) [1]
- (f) (i) in an ice bath (1) **allow:** in a refrigerator [1]
- (ii) curve less steep (1) to same level (1) [2]
- [Total: 15]**

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- 4 (a) pipette/burette (1) [1]
- (b) (i) methyl orange/phenolphthalein/litmus (1) **not**: Universal Indicator
- (ii) yellow/pink to orange or pink/colourless (1) [2]
- (c) nitric acid (1) more volume added than sodium hydroxide (1) [2]
- (d) repeat experiment (1) without indicator (1)  
evaporate solution (1) [3]
- [Total: 8]**
- 5 (c) bubbles/fizz/effervescence (1) [1]  
limewater (1) milky (1) [2]
- (d) (i) blue (1) precipitate (1) [2]
- (ii) blue precipitate (1) [1]  
dark/deep blue (1) solution/dissolves (1) [2]
- (e) barium/calcium (1) chloride (1) **not**: chlorine ions [2]
- [Total: 10]**
- 6 (a) Bunsen burner (1) **ignore**: switch [1]
- (b) labels on correct positions (1) [1]
- (c) (i) bulb lights/idea of molten lead (1)
- (ii) bulb goes out/no fizz (1) [2]
- (d) pressure of gas build up/explode owtte (1) [1]
- (e) iodine formed (1) **not**: iodide from iodide ions (1) [2]
- (f) fume cupboard/well ventilated area (1)  
**allow** gloves if reason specified **ignore**: goggles [1]
- [Total: 8]**

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- 7 known mass/weight (1) of each fertiliser (1)  
add to same amount of soil (1)  
+ bean (1) water (1)  
leave for specified time (1) observe plant growth/effect (1)  
comparison/conclusion (1) max 7

[7]

**[Total: 7]**