

**UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS**  
International General Certificate of Secondary Education

## **MARK SCHEME for the October/November 2007 question paper**

### **0620 CHEMISTRY**

**0620/06**

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.

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- 1 (a) (i) correct indication for crystals (1)
- (ii) correct indication of heat (1) no labels but correct position max 1 [2]
- (b) to cool/condense the water/gas/liquid (1) [1]
- (c) blue (1) to white/grey (1) [2]
- 2 (a) brown/orange/red-brown (1) [1]
- (b) (i) takes the place of oxygen owtte (1) not air [1]
- (ii) 16.6–17% (1) [1]
- (c) (i) formation of rust slower (1) [1]
- (ii) no effect (1) [1]
- 3 (a) So that all acid is used up/neutralised (1) [1]
- (b) filter (1) [1]
- (c) (i) no more solid/solute can dissolve (1) at that temperature (1) [2]
- (ii) use a glass rod to show crystals forming/observe crystals forming on edge of solution (1) [1]
- (d) to prevent breakdown of the crystals/not form powder/not lose water (1) [1]

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#### 4 Table of results

For all experiments

Initial temperature boxes correctly completed

18, 26, 16, 22

and final temperature boxes correctly completed (3) –1 for each incorrect

19, 29, 21, 41

Differences correctly completed (1) [4]

1, 3, 5, 19

(a) bubbles/fizz (1) [1]

(b) Appropriate scale for y-axis (1)  
4 bars correctly drawn (2), –1 for incorrect bar [3]

(c) (i) Experiment 1 (1) [1]

(ii) Experiment 4 (1) [1]

(d) correct reference to particle size/surface area (1)  
different chemicals used owtte (1) [2]

(e) reason (1) for specified reagent (1)  
e.g. marble chips (1) visible at end of reaction (1) [2]

(f) temperature changes would be smaller/less (1)  
larger volume of acid (1) [2]

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- 5** (a) (i) **Q** blue/purple (1) 11–14 (1) [2]
- (ii) **Q** no reaction/change (1)  
**R** bubbles/fizz (1) [2]
- (c) bubbles/fizz (1)  
limewater (1) milky (1) [3]
- (e) green (1) precipitate (1) [2]
- (f) hydrogen (1) [1]
- (g) carbon dioxide (1) [1]
- (h) hydrochloric acid/HCl (1) [1]
- (i) weak (1) acid (1) [2]
- 6** volumes correctly completed  
time/minutes
- |    | volume/cm <sup>3</sup> |     |
|----|------------------------|-----|
| 0  | 0                      |     |
| 2  | 18                     |     |
| 4  | 30                     |     |
| 6  | 33                     |     |
| 8  | 42                     |     |
| 10 | 45                     |     |
| 12 | 46                     | [3] |
- (a) All points plotted correctly (2)  
–1 for any incorrect  
smooth line graph (1) [3]
- (b) (i) at 6 minutes (1) [1]
- (ii) 37/38 cm<sup>3</sup> (1) [1]
- 7** same volume/mass of fuel/idea of fair test (1)  
initial temperature of water (1)  
burn/ignite fuel (1)  
record temperature of water (1)  
repeat (1)  
compare e.g. greatest temperature rise in specified time shows better fuel (1) [6]