UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIO

International General Certificate of Secondary Education

MARK SCHEME for the October/November 20

0620 CHEMISTRY

0620/06 Paper 6 (Alternative to Practical), maximum raw mark 60

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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 **(a)** **(i)** correct indication for crystals (1)

(ii) correct indication of heat (1) no labels but correct position

(b) to cool/condense the water/gas/liquid (1)

(c) blue (1) to white/grey (1)

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]

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 in

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]

5 **(a)** **(i)** **Q** blue/purple (1) 11–14 (1)

(ii) **Q** no reaction/change (1)
R bubbles/fizz (1)

(c) bubbles/fizz (1)
limewater (1) milky (1)

(e) green (1) precipitate (1) [2]

(f) hydrogen (1) [1]

(g) carbon dioxide (1) [1]

(h) hydrochloric acid/HC*l* (1) [1]

(i) weak (1) acid (1) [2]

6 volumes correctly completed

time/minutes	volume/cm^3
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^3 (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]