Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CHEMISTRY **0620/06**

Paper 6 Alternative to Practical **For Examination from 2016**

SPECIMEN MARK SCHEME

1 hour

MAXIMUM MARK: 40

The syllabus is accredited for use in England, Wales and Northern Ireland as a Cambridge International Level 1/Level 2 Certificate.

This document consists of **4** printed pages.

mark scheme abbreviations

;	separates marking points
/	alternative responses for the same marking point
not	do not allow
allow	accept the response
ecf	error carried forward
avp	any valid point
ora	or reverse argument
owtte	or words to that effect
underline	actual word given must be used by candidate (grammatical variants excepted)
( )	the word / phrase in brackets is not required but sets the context
max	indicates the maximum number of marks
Any [number] from:	accept the [number] of valid responses
note:	additional marking guidance

1 **(a)** tap / separating / dropping funnel; [1]
not: burette
delivery tube; [1]
gas jar; [1]
allow: measuring cylinder

(b) gas should be collected downwards / owtte [1]

(c) to remove water / to remove impurities [1]

2 **(a)** volume boxes completed correctly 0, 13, 22, 30, 36, 43, 49
note: all 7 correct = 2, 6 correct = 1, <6 correct = 0 [2]

(b) volume boxes completed correctly 0, 5, 10, 13, 17, 20, 23
note: all 7 correct = 2, 6 correct = 1, <6 correct = 0 [2]

(c) appropriate scale on *x*-axis and *y*-axis **and** labels **and** units; [1]
note: scale should cover at least half of grid
points plotted to ± half a small square accuracy;; [2]
note: >12 correct = 2, 10–12 correct = 1, <10 correct = 0
two labelled smooth line graphs **and** must plot volume at t = 0; [1]

(d) Experiment 1 / acid **X and** statement that acid **X** is stronger or more concentrated / ora [1]

(e) 71–73 s **and** indication shown on graph; [1]
allow: ecf from incorrect graph

(f) 13 ÷ 30 = 0.43; [1]
allow: 0.4
allow: ecf on plotting
cm^3/s / $cm^3 s^{-1}$ / cm^3 per s; [1]
allow: sec

(g) advantage: convenient / easy / quick to use; [1]
disadvantage: reference to inaccurate measurement; [1]

(h) graduated pipette / burette / gas syringe / mass of magnesium rather than strips / repeats and take average / take more frequent readings / suitable method for reducing initial loss of gas **and** any suitable comment on improved accuracy; [1]
note: explanation must relate to reason

3 **(a)** platinum / graphite / carbon [1]

(b) damp blue litmus paper / Universal indicator paper / pH paper; [1]
bleaches / turns white; [1]

(c) hydrogen [1]

4 **(a)** **(i)** white precipitate [1]

(ii) precipitate dissolves in excess; [1]

(iii) white precipitate; [1]
no change / precipitate remains; [1]

(b) contains water / hydrated [1]

(c) ammonia
not: ammonium [1]

(d) Any two from:
nitrate;
hydrated salt / contains water;
it is not a sulfate; [2]

(e) sodium hydroxide is hazardous / irritant / caustic; [1]
allow: toxic
boiling causes mixture to spit / blow-out; [1]

5 **(a)** Universal indicator / pH paper; [1]
pH of 4–6 / yellow / orange; [1]
note: any suitable test with appropriate result

(b) Any four from:
chromatography;
description of applying food colouring to paper;
use of solvent;
results / number of spots;
compare results to known sample / reference to R_f value; [4]
marks can be obtained from a labelled diagram