UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the May/June 2011 question paper

for the guidance of teachers

0620 CHEMISTRY

0620/61 Paper 6 (Alternative to Practical), maximum raw mark 60

Mark schemes must be read in conjunction with the question papers and the report on the examination.

- Cambridge will not enter into discussions or correspondence in connection with these mark schemes.

Cambridge is publishing the mark schemes for the May/June 2011 question papers for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.

Page 2	Mark Scheme: Teachers' version	Syllabus	Paper
	IGCSE – May/June 2011	0620	61

1 **(a)** beaker (1) [1]

(b) **(i)** (arrow) labelled heat in correct position under shaded crystals (1)

(ii) arrow labelled water in test-tube at or below the level of the ice (1) [2]

(c) to cool/condense the water or steam/owtte (1) [1]

(d) physical test **ignore** chemical tests
boiling point/freezing point (1)
100/0°C (1) [2]

2 **(a)** any two variables max 2
- volume
- concentration of acid **allow** amount
- volume of sodium thiosulfate/total volume of solution
- temperature
- printed sheet
- same size flask

ignore reference to pressure/catalyst/surface area/light max [2]

(b) straight line drawn with a ruler, missing anomalous point but touching all other points (1)
not multiple lines [1]

(c) any two sensible errors that could be from same category max 2
- qualified measurement error e.g. volume
- qualified timing error
- recording error
- plotting error
- temperature variation
- contamination from previous experiment

not systematic error max [2]

(d) 0.056–0.064 range (1) indication on graph (1) [2]

(e) more particles/particles closer together (1) more collisions (1) [2]

(f) sketch straight line to the LEFT of the original (1) [1]

Page 3	Mark Scheme: Teachers' version	Syllabus	Paper
	IGCSE – May/June 2011	0620	61

3 **(a)** chromatography (1) [1]

(b) water (1) [1]

(c) origin/base line/datum (1) [1]
ignore references to start/initial/pencil

(d) sweet C has 4 colours (1)
sweet D has 3 colours (1)
allow C has one more colour/more colours than D for one mark
2 colours are the same (1) [3]

4 Experiment 1

(a) and (b) initial and final volumes completed correctly (1) 0.0, 32.0

Experiment 2

initial and final volumes completed correctly (1) 19.0, 35.0

all readings in both experiments to 1 decimal place (1)
both differences correctly calculated (1) [4]

(c) oxygen(1) [1]

(d) **(i)** colourless **not** clear to purple/pink (1) **or** reverse [1]

(ii) potassium manganate is coloured/owtte (1) [1]
accept is not an acid/alkali reaction

(e) **(i)** experiment 1(1) **allow** ecf [1]

(ii) experiment 1 2× volume of experiment 2 [1]

(iii) solution B more concentrated/stronger (1) **or** converse
2× as concentrated (2) [2]

(f) half value from table result for experiment 2 / 8 (1) cm^3 (1)
half volume of peroxide used (1) [3]

(g) advantage easy to use/quick/convenient/<u>fairly</u> accurate (1)
disadvantage not accurate owtte (1) [2]

Page 4	Mark Scheme: Teachers' version	Syllabus	Paper
	IGCSE – May/June 2011	0620	61

5 **(a)** **(ii)** colourless (1) **allow** yellow no smell (1) [2]

(b) **(ii)** extinguished/owtte (1) [1]

(d) yellow (1) precipitate (1) [2]

(e) organic (1) **allow** hydrocarbon
fuel/alcohol/named alcohol (1) **allow** flammable [2]

6 **(a)** diagram of a filter paper in a funnel (1) label funnel/filter paper (1) [2]

(b) 0.45, 0.95, 1.40, 1.90, 2.35 and 2.35 (2), –1 for each incorrect up to 2 [2]

(c) all points plotted correctly (2), –1 for each incorrect point up to 2
two intersecting straight lines (1) **ignore** origin [3]

(d) 5 cm^3 (1) **ignore** unit [1]

7 **(a)** appropriate test (1) result (1) [2]
e.g.

pH paper or named indicator	11–14 **or** correct colour
named metal salt solution/ion	correct colour precipitate
ammonium salt/heat	ammonia/owtte

(b) fizzy drinks may be acidic/contain carbon dioxide (1)
chlorine formed (1) toxic (1) max [2]

(c) answer connected to health and safety (1) [1]
allow to affect the environment/to clean it

(d) litmus/pH/UI paper (1) bleached owtte (1) [2]

[Total: 60]