

**MARK SCHEME for the October/November 2010 question paper
for the guidance of teachers**

0620 CHEMISTRY

0620/53

Paper 5 (Practical), maximum raw mark 40

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) Table of results for *Experiment 1*
 volume of acid box completed correctly (1)
 comparable to supervisors (1)
- (b) Table of results for *Experiment 2*
 volume of acid box completed correctly (1)
 comparable to supervisors (1) –1 if not 1 decimal place [4]
- (c) pink (1) to colourless (1) **not** clear [2]
- (d) (i) hydroxide [1]
 (ii) neutralisation [1]
- (e) (i) experiment 2 [1]
 (ii) experiment 2 2× volume experiment 1 [1]
 (iii) alkaline solution **G** more concentrated/stronger (1) or converse
 2× as concentrated (2) [2]
- (f) half value from table result for experiment 2 (1) cm³ (1)
 half volume of **G** used (1) max 2 [2]
- (g) (i) two sources of error
 e.g. using a measuring cylinder to measure alkalis/going past end point owtte [2]
 (ii) two meaningful improvements related to above
 e.g. use a pipette/burette/repeat experiment or use different indicator [2]
- [Total: 18]**
- 2 (a) white/colourless crystals [1]
- (b) melts/turns into a liquid owtte (1)
 crackles (1)
 pH paper turns blue/ pH > 7 (1)
 smell (1) max 2 [2]
- (c) (i) white (1) precipitate (1) [2]
 (ii) no change/no reaction owtte [1]
 (iii) pungent/smelly (gas) (1)
 indicator paper turns blue or pH > 7 (1) [2]

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- (d) solid turns white/colour fades (1)
condensation at top of tube (1)
acidic gas (1) max 2
- (e) (i) green (1) precipitate (1) [2]
(ii) white precipitate [1]
(iii) (manganate) turns colourless/yellow/orange/brown [1]
- (f) steam (1)
heat given off (1)
solid turns green/brown/yellow/orange (1) max 2 [2]
- (g) ammonia [1]
- (h) ammonium (1) sulfate (1) [2]
- (i) iron (1) (II) (1) sulfate (1) [3]

[Total: 22]