

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS  
International General Certificate of Secondary Education

**MARK SCHEME for the October/November 2011 question paper  
for the guidance of teachers**

**0620 CHEMISTRY**

**0620/52**

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.

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

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- 1 (a) table of results for *experiment 1*  
all boxes completed correctly (1)  
readings to 1 d.p. (1)  
comparable to supervisors (1)  $\pm 3 \text{ cm}^3$  [3]
- (b) table of results for *experiment 2*  
all boxes completed correctly (1)  
readings to 1 d.p. (1)  
comparable to supervisors (1)  $\pm 3 \text{ cm}^3$  [3]
- (c) red / brown (1) [1]
- (d) blue / black (1) **not:** purple to colourless (1) **not:** clear [2]
- (e) as an indicator / to test for iodine / owtte (1) [1]
- (f) (i) experiment 2 (1) [1]  
(ii) experiment 2 is 2 $\times$  volume of experiment 1 (1) **allow:** almost double [1]  
(iii) solution F more concentrated / stronger (1) or converse  
twice / double (1) [2]
- (g) half value from table result for experiment 1 (1)  
half volume of potassium iodate/iodine (1) [2]
- (h) (i) two sources of error  
e.g. using a measuring cylinder to measure iodate/acid  
experiment only carried out once  
going past end point / owtte  
**not:** references to human error / temperature / rinsing [2]  
(ii) two meaningful improvements related to above  
e.g. use a pipette / burette  
repeat experiment [2]
- [Total: 20]**
- 2 (a) (i) liquid H blue and no smell (1) any reference to smell = 0  
pH < 7 (1) [2]  
(ii) liquid J colourless (1) **not:** clear  
sweet smell / petrol / acetone / owtte (1) **not:** pungent / strong  
two layers / immiscible (1) with indicator paper pH 7 or green (1) [4]

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- (b) white precipitate (1) [1]
- (c) (i) blue (1) precipitate (1)  
on heating black (1) [3]
- (ii) blue precipitate (1) dissolves / solution (1)  
deep / royal blue (1) [3]
- (d) (i) extinguished / goes out / no reaction (1)  
**not:** no change / nothing happens [1]
- (ii) flame / catches fire (1) orange / yellow (1) smokey / sooty (1) max 2  
orange / yellow or smokey / sooty flame = (2)  
reference to glowing splint = 0 [2]
- (e) copper (1) sulfate (1)  
acidic (1) water present / aqueous (1) max 2 [2]
- (f) organic (1) hydrocarbon / non polar (1)  
**allow:** flammable / fuel / alkane **not:** alcohol [2]

**[Total: 20]**