

# Experimental Techniques

## Mark Scheme 2

<b>Level</b>	IGCSE
<b>Subject</b>	Chemistry
<b>Exam Board</b>	CIE
<b>Topic</b>	Experimental Techniques
<b>Sub-Topic</b>	
<b>Paper Type</b>	Alternative to Practical
<b>Booklet</b>	Mark Scheme 2

**Time Allowed:** 51 minutes

**Score:** /42

**Percentage:** /100

- 1 (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]

- 2 (a) chromatography (1) [1]
- (b) line drawn on diagram below origin (1) [1]
- (c) does not interfere with results/owtte (1) [1]
- (d) difference  
A has more/3 colours/B has less/2 colours/B contains F but A doesn't/A contains C/  
D but B does not (1)
- similarity  
both contain same colour/E (1) [2]
- (e) C, D and E (1) [1]
- 3 (a) boxes correctly completed
- measuring cylinder (1)
- spatula (1)
- tripod (1) [3]
- (b) more than enough to react owtte (1) [1]
- (c) diagram showing filter paper in a funnel (1) either labelled (1) [2]

**[Total: 6]**

- 4 (a) mortar (1)  
stirrer/(glass) rod (1) not metal rod or thermometer  
funnel (1) not filter or filter paper [3]
- (b) water [1]
- (ii) origin correctly labelled on diagram i.e. at dot [1]
- (c) two spots/dots at different levels in vertical line [1]  
allow three spots if one is origin

**[Total: 6]**

- 5 (a) thermometer (1)  
B beaker (1)  
C tripod (1) [3]
- (b) to cool / condense the vapour (1) [1]
- (c) measure the boiling point (1) [1]

**[Total: 5]**

- 6 (a) does not dissolve in solvent / interfere with results owtte (1) [1]
- (b) 1 and 3 (1) [1]
- (c) sample 4 (1)  
two spots present (1) [2]
- (d) to show position of the acids / spots (1) [1]

**[Total: 5]**

- 7 (a) pestle (1) and mortar (1) [2]
- (b) chlorophyll more soluble in ethanol or similar [1]
- (c) filtration [1]
- (d) chromatography (1), paper (1), add pigments (1), use of solvent (1) [4]