SEPARATION TECHNIQUES 1

MARK SCHEME

Q1.

Question	Answer	Extra information	Marks
(a)(i)	smooth curve through all points	do not accept multiple lines	1
(ii)	36.9 to 37.2	if outside range accept correct reading from candidate's own curve +/- half small square	1
(iii)	35.8 (at 20°C)		1
	correctly calculated answer to their (a)(ii) - 35.8	ignore units ecf from incorrect reading of 35.8 or incorrect transfer of (a)(ii) correct answer from (a)(ii) without working = 2 marks	1
(b)	some recognition that the (y-axis) scales are different or some indication of the effect this has e.g. in B: values compressed / not fine enough or scale in B less precise/larger range	do not accept x-axis scale is different accept converse for A ignore precise graph	1
Total marks			5

Q2.

Question	Answer	Extra information	Marks
	evaporate		1
	condenses		1
Total marks			2

Q3.

Question	Answer	Extra information	Marks
(i)	flask	accept clear mispellings	1
(ii)	condenser	accept clear mispellings	1
Total marks			2

Q4.

Question	Answer	Extra information	Marks
(a)(i)	prevent evaporation of solvent	allow prevent loss of solvent allow to support the (chromatography) paper	1
(ii)	ink dissolves in the solvent or carbon / graphite does not dissolve in the solvent	allow ink 'runs' / spreads or pencil does not 'run' / spread allow ink would affect the result / mixes with colours accept pencil for carbon / graphite	1
(b)(i)	4		1
(ii)	any one from: • because not all colours match • not all colours are safe • some colours could be unsafe • some colours travelled higher (than safe colours)	no mark for 'no / don't know' ignore numbers	1
Total marks			4

Q5.

Question	Answer	Extra information	Marks
(i)	precipitation		1
(ii)	filtration		1
(iii)	lead nitrate		1
	sodium iodide		1
Total marks			4

Q6.

Question	Answer	Extra information	Marks
(i)	pencil		1
	so it will not run / smudge / dissolve or because ink would run / smudge / dissolve	ignore pencil will not interfere with / affect the results ignore ink will interfere with / affect the results	1
(ii)	any three from: • 3 colours in Cola • 2 colours in Fruit drink • one of the colours is the same • two of the colours in Cola are different • one of the colours in Fruit drink is different • one of the colours in Cola is the most soluble	reference to spots / dots = max **2** allow colouring for colour allow more colours in cola or fewer colours in fruit drink allow some of the colours in the drinks are different accept one of the colours in Cola has the highest Rf value	3
Total marks			5