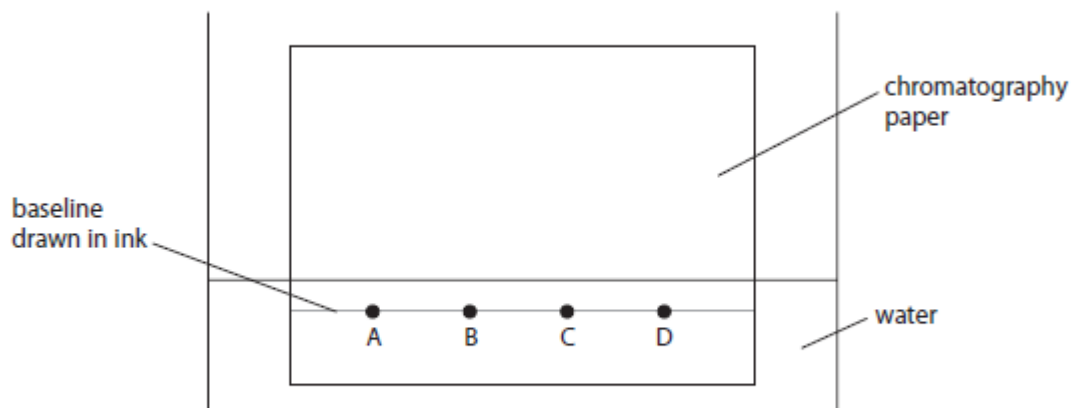


Activity 5 – Chemistry

Paper 1C, Q4a

- 4 A student uses this apparatus to investigate the colours in four different inks, A, B, C and D.



- (a) Explain two mistakes the student made when setting up his experiment.

(4)

4 a	<p>Explanations that link together the following two pairs of points:</p> <p>M1 baseline has been drawn in ink</p> <p>M2 and therefore it will interfere with /contaminate the results</p> <p>M3 the water level is above the ink spots</p> <p>M4 and therefore the inks will mix with the water</p>	<p>ACCEPT not drawn in pencil</p> <p>ACCEPT will produce other colours/will move up the paper/will get mixed up with the ink samples</p> <p>ALLOW pencil will not interfere with the results/ pencil will not dissolve</p> <p>ACCEPT too high/above the baseline</p> <p>ACCEPT the spots are under water</p> <p>ACCEPT the inks will dissolve in the water / the inks will wash off the paper</p>	4
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14 A salt can be made by reacting an acid with an insoluble base.

A student has a sample of copper(II) oxide.

The student uses this method.

Stage 1 pour 50 cm³ of dilute sulfuric acid into a beaker

Stage 2 warm the acid using a Bunsen burner

Stage 3 add a small amount of copper(II) oxide to the warm acid and stir the mixture

Stage 4 add further amounts of copper(II) oxide until copper(II) oxide is in excess

Stage 5 filter the mixture

Stage 6 obtain crystals from the filtrate

(e) Describe how the student could obtain a pure, dry sample of hydrated copper(II) sulfate crystals from the filtrate in stage 6.

(5)

Question number	Answer	Notes
14e	M1 heat/boil the filtrate	NOTE: If the solution is heated to remove all the water then only M1 can be awarded NOTE If the solution is left to evaporate all the water without heating only 1 mark can be awarded
	M2 until crystals form in a cooled sample/ on a glass rod	ACCEPT to crystallisation point/to form a saturated solution/until crystals start to form /to remove some of the water M2 dep on M1
	M3 leave the solution to cool/crystallise	NOTE: If the solution is left to completely evaporate after heating then award MAX 3
	M4 filter (to remove the crystals)	ACCEPT decant the (excess) solution IGNORE references to washing the crystals
	M5 dry the crystals on filter paper/on paper towel/in a warm oven/in a desiccator / leave to dry	REJECT hot oven or any method of direct heating e.g. Bunsen burner No M5 if crystals washed after drying