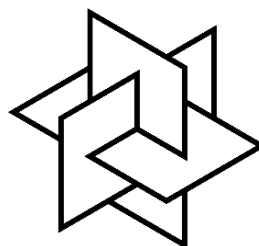

CE AT 13+

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Core Chemistry Specimen Paper Mark Scheme

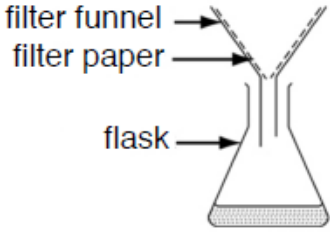
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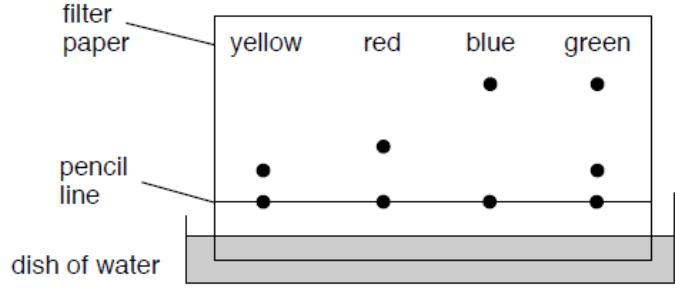
Information

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Q.	Answer	Mark	Additional Guidance
1.	a) hydrogen b) limewater c) 7.6 cm^3 d) hydrogen e) a mixture of two compounds f) carbon dioxide and water g) less than the calcium carbonate	7	
2.	a) waterproof strong can be cut into thin sheets	2	any two correct
	b) i) good conductor of electricity malleable/ductile	1 1	
	ii) to prevent electric shocks/(electrical) insulator	1	
3.	a) it would dissolve	1	
	b) 	2	1 mark for diagram 1 mark for labelling accept any suitable method for collecting filtrate
	c) evaporate the water from the filtrate	1	
	weigh the remaining salt	1	
	d) nitrogen unreactive air contains oxygen/water which could react with/oxidise the crisps	1 1	any two accept 'bacteria thrive in air/water'

Q.	Answer	Mark	Additional Guidance
4.	a) i) chromatography	1	
	ii) filter paper is absorbent/soaks up solvent	1	
	b) i) blue spot exactly twice as far as red dye	1	use ruler to check
	ii) 	1	
	c) spots may travel different distance due to differing solubility in propanone than water	1 1	any sensible suggestion with an explanation
5.	a) X : evaporating/boiling Y : condensing Z : freezing/solidifying	3	
	b) i) water boils at 100 °C/cannot reach 133 °C/ oil boils above 133 °C	1	do not accept just 'safety'
	ii) oil is flammable/electric heater allows more controlled heat supply	1	
	c) A is (probably) pure urea B is impure urea	2	
6.	a) i) a particle with two or more atoms joined together	1	1 mark for correct symbols; 1 mark for formula, must have subscripts
	ii) C ₂ H ₆ O C ₂ H ₅ OH CH ₃ CH ₂ OH	2	
	b) i) distillation	1	
	ii) it condenses	1	
	iii) ethanol has a lower boiling point/more volatile than water	1	
	more ethanol than water boils off	1	
	c) pH meter more accurate	1	accept 'UI contaminates liquid'
	cannot see colour change of UI in red wine	1	
	d) red wine	1	
	e) i) sodium hydroxide, calcium hydroxide, sodium carbonate	1	any alkali or carbonate
	ii) neutralisation	1	

Q.	Answer	Mark	Additional Guidance
7.	a) hydrogen peroxide → water + oxygen	1	allow manganese oxides on both sides of equation or above arrow
	b) glowing splint/spill relights	1	
		1	
	c) i) replace tube with measuring cylinder/gas syringe	1	1 mark for any correct working
	ii) $\frac{100}{150} \times 6 = 4 \text{ cm}^3$	2	
	iii) in a solution/liquid, particles are close together	1	
	in a gas, particles are far apart, leading to a much greater volume	1	
8.	d) weigh the manganese oxide beforehand filter the liquid after the reaction wash and dry the manganese oxide residue weigh the manganese oxide no change in mass shows that manganese oxide not used up	4	any four good points, clearly explained
	a) it evaporated	1	(not 'mixed together')
	b) diffusion	1	
	particles moving randomly in all directions and spreading	2	
Total		60	