

Independent Schools
Examinations Board

COMMON ENTRANCE EXAMINATION AT 13+

SCIENCE

LEVEL 2




CHEMISTRY

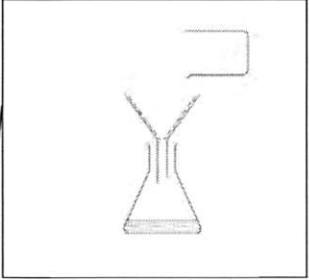
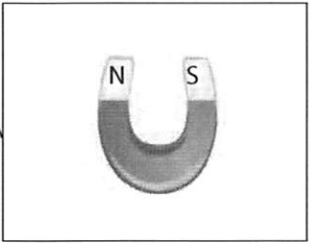
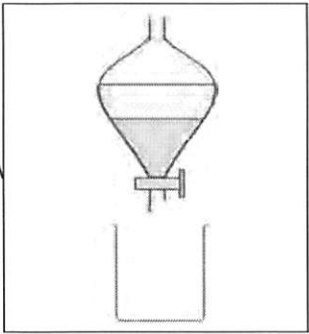
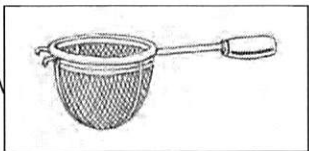
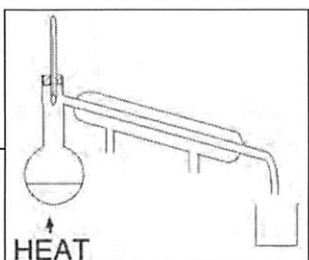
MARK SCHEME

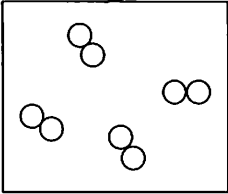
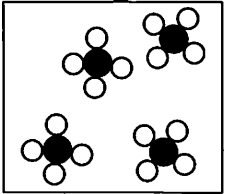
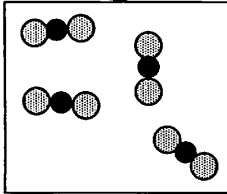
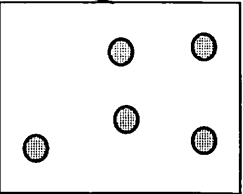
This is a suggested, not a prescriptive, mark scheme.

Tuesday 5 November 2013



Q.	Answer	Mark	Additional Guidance
1. (a) carbon dioxide (b) sulphur dioxide (c) carbon (d) sublime (e) 800 cm ³		1 1 1 1 1	
2.	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>saucepan bottom</p> </div> <div style="text-align: center;">  <p>water pipes</p> </div> <div style="text-align: center;">  <p>wire</p> </div> </div>	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>shiny</p> </div> <div style="text-align: center;"> <p>good conductor of heat</p> </div> <div style="text-align: center;"> <p>good conductor of electricity</p> </div> <div style="text-align: center;"> <p>unreactive</p> </div> </div>	3

Q.	Answer	Mark	Additional Guidance
3. (a)	iron from a mixture of iron filings and sugar		<p>award 4 marks for all five correct</p> <p>3 marks for four correct</p> <p>2 marks for three correct</p> <p>1 mark for one/two correct</p>
oil from a mixture of oil and water			
sand from a mixture of sand and stones			
chalk from chalky water			
pure water from ink			
		4	

Q.	Answer	Mark	Additional Guidance
4. (a)	(i) substance that cannot be broken down into anything simpler by chemical means/ contains only one type of atom	1	
	(ii) carbon, chlorine, hydrogen, oxygen	2	2 marks – four correct 1 mark – three or two correct
(b) (i)	two or more atoms joined together	1	
(ii)	<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">CO_2</div>  </div> <div style="text-align: center;"> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">Cl_2</div>  </div> <div style="text-align: center;"> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">He</div>  </div> <div style="text-align: center;"> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">CH_4</div>  </div> </div>	3	award 3 marks for all four correct 2 marks for two/three correct 1 mark for one correct
(c)	movement: solid – vibrate; gas – free movement	1	
	arrangement: solid – regular/close together; gas – far apart/random	1	
5. (a)	(i) flame to be more wavy	1	
	(ii) yellow/orange	1	
(b)	easier to see	1	
(c)	less air/incomplete combustion	1	
	carbon formed instead of carbon dioxide	1	
(d) (i)	X just above inner cone	1	
	(ii) use pure oxygen	1	

Q.	Answer	Mark	Additional Guidance
6. (a) (i)	lead + magnesium oxide	1	
(ii)	no reaction	1	
(b)	below copper/at the bottom	1	
(c)	pink/brown/orange solid appearing blue colour of solution fading	1 1	
7. (a) (i)	the amount of sodium hydrogen carbonate added	1	
(ii)	pH	1	
(iii)	the volume of vinegar	1	credit any relevant point
(b) (i)		<p>2 marks for six points accurately plotted</p> <p>1 mark for three/four/five points accurately plotted</p> <p>1 mark for line of best fit – must be a curve</p>	
			(iii)

Q.	Answer	Mark	Additional Guidance
(c) (i)	3	1	
(ii)	4 cm ³	1	
(iii)	8	1	
(d) (i)	it is alkaline/it is an alkali	1	allow 'base'
(ii)	neutralisation	1	
8. (a)	chromatography	1	
(b)	yellow, red and blue	1	all three needed
(c)	blue and yellow mixed together	1	
(d)	3.5 cm/5 cm = 0.7	2	
(e)	other colour is blue	1	
	spots drawn level with the red and blue on the chromatogram	1	
(f) (i)	value unchanged	1	
(ii)	different value	1	
9. (a) (i)	water	1	
(ii)	salt (sodium chloride)	1	
(b) (i)	hydrogen	1	
(ii)	lit splint	1	carry forward credit if incorrect answer given to (b)(i)
	burns with a pop	1	
(c) (i)	same	1	
(ii)	more	1	
Total		60	