

## Electrolysis

### Mark scheme

1.	(a)	positive	accept + <b>or</b> +ve <b>or</b> plus	1	
	(b)	chlorine		1	
	(c)	(i)	hydroxide	1	
			<i>Any indication of hydro...</i>		
		(ii)	destroys / damages / dissolves (owtte) the hair / follicle / root	1	
			<i>allow burns / reacts with the hair</i>		
			<i>ignore incorrect name of compound</i>		[4]
2.	(i)	electrolysis		1	
	(ii)	oxidation		1	
	(iii)	hydroxide ions <b>or</b> OH <sup>-</sup>	<i>accept sodium hydroxide <b>or</b> hydroxide <b>or</b> OH for one mark only</i>	2	
	(iv)	H <sup>+</sup> + e <sup>-</sup>		1	
		H <sub>2</sub>		1	
			<i>ignore any state symbols</i>		
		2H <sup>+</sup> + 2e <sup>-</sup> → H <sub>2</sub>		1	
			<i>accept H<sup>+</sup> + e<sup>-</sup> → H for <b>one</b> mark only</i>		[7]
3.	(a)	breakdown / decomposition / splits into elements	<b>not</b> ions	1	
		separates into elements /produce a chemical reaction			
		using electricity		1	
	(b)	lead bromide melted / free ions not electrolyte		1	
	(c)	(+) bromine	<i>element must be appropriate to electrode</i>	1	
		(-) lead	<i>element must be appropriate to electrode</i>	1	
	(d)	fume cupboard / protective clothing		1	
			<i>allow safety glasses <b>not</b> safety mat</i>		[6]