KS3 Chemistry

Answers

Chapter 7 – Metals and other materials

Question	Answers	Extra information	Mark
1(a)	a polymer has very long molecules a polymer has identical groups of atoms, repeated many times		1 1
(b)	rubber bungee cord		1
2(a)	potassium		1
(b)	potassium/sodium/magnesium		1
(c)	copper/gold		1
3(a)	bricks – strong in compression overhead power line insulators – do not conduct electricity plates and cups – unreactive with water, acids, or alkalis jet engine turbine blades – high melting point scratch-resistant tiles – hard	3 marks for three correctly matched 2 marks for two correctly matched 1 mark for one correctly matched	4
(b)	brittle/stiff/break easily under tension/high boiling point		1
4(a)	copper/gold		1
(b)	magnesium released the most bubbles		1 1
(c)	hydrogen		1
5(a)	potassium – sodium – lithium – magnesium	2 marks for two in correct position 1 mark for one in correct position	3
(b)	lithium oxide		1
6(a)i	Corrosive		1
(a)ii	wear goggles/gloves	Accept other reasonable suggestion	1

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(b)	Any **two** from: • bubbles/release gas • heating • colour change		2
(c)	hydrochloric acid – chloride sulfuric acid – sulfate nitric acid – nitrate	1 mark for one correctly matched	2
7(a)	a reaction where a more reactive metal displaces a less reactive metal from its compound	Accept a reaction between a more reactive metal with a less reactive metal compound for 1 mark	1 1
(b)	extracting metals (from ores)	Accept any other valid use	1
(c)i	magnesium zinc iron copper	2 marks for two in correct position 1 mark for one in correct position	3
(c)ii	the more reactions completed, the more reactive the metal magnesium reacted with all/three compounds, zinc with two compounds, iron with one compound and copper did not react	Accept any implication that this was how the order was deduced	1 1
8(a)	a rock that contains a metal compound that can be extracted		1
(b)	750 kg	Accept 5000 × 0.15 for 1 mark Accept 5000 × (15/100) for 1 mark	2
(c)	F → D → E → B → C → (A)	3 marks for three in correct position 2 marks for two in correct position 1 mark for one in correct position	4
9(a)	polythene – carrier bags synthetic rubber – car tyres		1

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Question	Answers	Extra information	Mark
(b)	**Polythene for carrier bags:** • can be rolled into thin sheets, so bags will not be too heavy • low density, so bags will not weigh very much • water resistant, so will not become weaker in the rain • not very elastic, so the handles/bag will not stretch too far when carrying a load • can be made any colour, so shops can match their logo/branding **Synthetic rubber for car tyres:** • water resistant, so will not be affected by rain/wet roads • hard, so will resist materials puncturing the surface • elastic, so will absorb impacts by changing shape	Answers require a fact about the material and a reason for its use for each marking point For 6 marks, answers should contain at least two reasons for using polythene for carrier bags, and at least two reasons for using synthetic rubber for car tyres Accept other correct reasons using wider knowledge, for example, rubber is oil/petrol/chemical resistant so will not be affected by fuel spillages	6
	SPACED LEARNING QUESTIONS		
10(a)	a neutral solution has a pH of 7 you cannot use litmus paper to find out the pH of a solution		1 1
(b)	neutralisation		1
11(a)	a change in which atoms are rearranged and joined together differently to make new substances		1
(b)	nitrogen + oxygen → nitrogen monoxide		1 1
(c)	yes there are the same number of particles before and after the reaction has taken place		1 1