




C1  
Foundation Tier only questions

Question Number		Sub-section		Mark	Answer	Accept	Neutral answer	Do not accept
FT	HT							
1		(a)		2	<p>all three correct for (2) any one for (1)</p>			
		(b)		2	<p>A    electron    negative B    nucleus    positive</p> <p>all four correct for (2) any two for (1)</p>			

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FT	HT								
2		(a)			3	<p>today's atmosphere has</p> <ul style="list-style-type: none"> <li>• less water vapour lower</li> <li>• less carbon dioxide lower</li> <li>• no / less sulfur dioxide</li> <li>• more nitrogen</li> <li>• contains oxygen / more oxygen</li> </ul> <p>any three for (1) each – comparison required</p> <p>if no credit gained, award (1) for quoting amounts of carbon dioxide <b>and</b> nitrogen in volcano and atmosphere</p>	converse	water disappeared amounts quoted	
		(b)			2	<p>photosynthesis (1)</p> <p>respiration (1)</p>	combustion	breathing burning	
		(c)			2	<p>carbon dioxide (1)</p> <p>sulfur dioxide / oxides of nitrogen (1)</p>	formulae	methane	

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3		(a)			4	calcium oxide (1) 2 (1) copper and sulfur (1) Na <sub>2</sub> O (1)			
		(b)			2	 hydrogen  oxygen  carbon  all three correct for (2) any two for (1)		symbols	

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4		(a)	(i)		1	lemon juice			
			(ii)		1	saliva			
		(b)	(i)		2	magnesium chloride (1) water (1)	formulae		
			(ii)		2	carbon dioxide (1) gas must be correct to award test mark  turns limewater milky (1)			

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5		(a)	(i)	1	compound that contains hydrogen and carbon only			mixture
			(ii)	2	decaying / remains of / dead (marine) organisms (1) heat / pressure over millions of years (1) must have reference to organisms/correct context to award second mark			
		(b)	(i)	1	bitumen and naphtha	recalled knowledge e.g. wax		
			(ii)	2	22% (2) award (1) for 156 or 44 ecf possible for incorrect addition (must divide by 2)			
			(iii)	I	1	cracking		
				II	1	polymerisation		

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6		(a)			1	nitrogen	N <sub>2</sub>		
		(b)			1	have the same / similar boiling points / both have boiling point of -154°C			
		(c)			2	solid (1) must be correct to award second mark  cooled to below 0°C / below its freezing point / water freezes at 0°C (1)		water is frozen	
		(d)			1	unreactive / inert		noble non-flammable	

## Common questions

Question Number		Sub-section			Mark	Answer	Accept	Neutral answer	Do not accept
FT	HT								
7	1	(a)			2	liquid (1) must be correct to award second mark  melting point below <b>and</b> boiling point above room temperature / 20°C (1)			
		(b)			2	less reactive down the group (1)  no / very slow reaction (1)	converse		
		(c)			1	$2\text{Fe} + 3\text{F}_2 \rightarrow 2\text{FeF}_3$			
		(d)	(i)		1	$2\text{Cl}^- - 2\text{e}^- \rightarrow \text{Cl}_2$			
			(ii)		1	concentration of iodide in seawater is too low / very low	electricity too expensive		
			(iii)		1	toxic / kills bacteria		gets rid of bacteria	

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8	2	(a)	(i)	2	iron(III) oxide + aluminium → iron + aluminium oxide  (1) for <b>both</b> reactants (1) for <b>both</b> products	correct chemical equation	powder	magnesium as reactant
			(ii)	2	aluminium more reactive than iron (1) must be correct to award second mark  takes oxygen from iron / reduces iron(III) oxide (1)			
			(iii)	1	no reaction			
		(b)	(i)	3	iron ore – provides the iron (1)  coke – reduces iron oxide / fuel / burns to produce heat / forms carbon monoxide (1)  limestone – removes impurities (1)		makes iron  source of heat  forms slag	
			(ii)	I	1	$\text{Fe}_2\text{O}_3 + 3\text{CO} \rightarrow 2\text{Fe} + 3\text{CO}_2$		
				II	1	loss of oxygen / gain of electrons		



Question Number		Mark	Answer
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9	3	6	<p><b>Indicative content:</b> e.g. <b>aluminium:</b> low density – used to build aircraft; good heat conductor – saucepans; good electrical conductor and low density – overhead power cables etc.</p> <p><b>copper:</b> good electrical conductor – electrical wires; good heat conductor – saucepan bases etc.</p> <p><b>titanium:</b> strong with low density – rotors on helicopters, hip replacements etc.</p> <p>credit can be awarded for correct uses and properties of metals not described in the specification</p> <p><b>5–6 marks:</b> The candidate constructs an articulate, integrated account correctly linking relevant points, such as those in the indicative content, which shows sequential reasoning. The answer fully addresses the question with no irrelevant inclusions or significant omissions. The candidate uses appropriate scientific terminology and accurate spelling, punctuation and grammar.</p> <p><b>3–4 marks:</b> The candidate constructs an account correctly linking some relevant points, such as those in the indicative content, showing some reasoning. The answer addresses the question with some omissions. The candidate uses mainly appropriate scientific terminology and some accurate spelling, punctuation and grammar.</p> <p><b>1–2 marks:</b> The candidate makes some relevant points, such as those in the indicative content, showing limited reasoning. The answer addresses the question with significant omissions. The candidate uses limited scientific terminology and inaccuracies in spelling, punctuation and grammar.</p> <p><b>0 marks:</b> The candidate does not make any attempt or give a relevant answer worthy of credit.</p>