

C2

Foundation Tier

Q.1	Mark	Answer	Accept	Neutral answer	Do not accept
a i	1	A and C (both needed)			
ii	1	Y contains three substances /Y does not contain A,B or C			
b	2	$\frac{6}{10}$ (1) = 0.6 (1)			

Q.2	Mark	Answer	Accept	Neutral answer	Do not accept
a i	1	2.8.1			
ii	1	3			
iii	1	4			
iv	1	D			
v	1	proton			
b i	2	$40 + 12 + 3(16)$ (1) $= 100$ (2) - two marks for correct answer			
ii	2	$\frac{40}{100} \times 100$ (1) $= 40$ (2) - two marks for correct answer	consequential marking		

Q.3	Mark	Answer	Accept	Neutral answer	Do not accept
a i	1	nitrogen	N ₂	N	
ii	1	simple covalent	simple molecular	covalent	
iii	1	nitrogen/graphite	N ₂ /C	N	
b	2	high melting point/good conductor of heat/malleable – any two for 1 mark each		good conductor	
c	1	C			

Q.4	Mark	Answer	Accept	Neutral answer	Do not accept
a i	3	all seven points plotted correctly (2) one error (1) two or more errors (0) smooth curve going through the reliable points (not 92-30) (1)			
ii	2	49 (from graph) (1) graph levels/reaches 120 or highest volume of gas (1)			
iii	2	between 0 and 10 (1) steepest slope/most gas given off in 10 seconds (1)			
b	2	using powdered calcium carbonate/increasing the temperature/increasing the concentration of the acid – any two for one mark each		catalyst	more acid
c	1	no solid left at the end of the experiment/all the solid used up	increase in the volume of gas given off		acid left at the end of the experiment

Q.5	Mark	Answer	Accept	Neutral answer	Do not accept
a i	1	C_3H_6			
ii	1	B			
iii	1	C			
b	1	$ \begin{array}{ccccccc} & H & & H & & H & & H \\ & & & & & & & \\ H & -C & - & C & - & C & - & C-H \\ & & & & & & & \\ & H & & H & & H & & H \end{array} $			
c	3	heat/ (1) PVC would melt/soften/loose shape (1) melamine no change/char (1) or warm/place in hot water(1) PVC would soften/ loose shape (1) melamine no change(1)		burn	

Q.6	Mark	Answer	Accept	Neutral answer	Do not accept
a	1	screen/tongs/small piece of lithium/large volume of water – any one			laboratory coat
b	2	lithium hydroxide (1) hydrogen (1)	LiOH (1) H ₂ (1)	H	
c	1	lithium (1)	Li		
d	2	burns/lilac flame spits (more) melts moves faster fizzes more – any two for 2 marks	disappears quicker	dissolves quicker	

Q.7	Mark	
	6	<p>Indicative content: Description – heating the mixture in the flask to produce hot vapours. In the condenser the water enters at the lower end of the condenser and leaves at the higher point. The hot vapours from the flask then enter the condenser where they then cool, condense and runs down into the beaker as liquid. Explanation - since the boiling point of ethanol is lower than that of water the vapours will initially contain mainly ethanol and will therefore enter the condenser/beaker first.</p> <p>5-6 marks 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>3-4 marks 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>1-2 marks 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>0 marks The candidate does not make any attempt or give a relevant answer worthy of credit.</p>

Q.8	Mark	Answer	Accept	Neutral answer	Do not accept
a	1	sodium	Na		
b	3	Na + Cl ₂ (1) NaCl (1) correct balancing (1)	consequential marking		
c	2	add silver nitrate solution (1) white precipitate/solid formed (1)			

Q.9	Mark	Answer	Accept	Neutral answer	Do not accept
a	1	6 and 2 – both needed			
b i	1	B	oxide/O ²⁻	oxygen/O	
ii	1	2-	O ²⁻		
c	1	D	neon/Ne		
d	2	D and E – both needed (1) same number of protons but a different number of neutrons / same element but a different number of neutrons (1)			