## **Quantitative Chemistry**

Reading: pages 41-45

## **Knowledge**

1. What is the mass number for Na?	
2. How is formula mass calculated?	
3. What is the formula mass of CH <sub>4</sub>	KNO <sub>3</sub>
4. What happens to mass during a chemical reaction?	
5. What do the symbols (s), (l), (g) and (aq) mean?	
6. How many cm <sup>3</sup> are there in 1dm <sup>3</sup> ?	
7. What is the equation linking mass, volume and concentration	ation?
Application	
1a) What is the formula mass of Calcium chloride (CaCl <sub>2</sub> )	
1b) Calculate the percentage of calcium in calcium chloride	
1c) If you had 50g of CaCl <sub>2</sub> , what mass of calcium would it c	
2. What does the 'conservation of mass' idea state?	
3. Why might mass <b>appear</b> to go up or down during a react	ion?
4. What does the term 'concentration' mean?	

5. Look at the equation be	elow:				
$CaCO_3 \rightarrow CaO + CO_2$					
300g of CaCO <sub>3</sub> was heated and produced 168g of CaO. What mass of CO <sub>2</sub> was formed? Show your working.					
6. Some students carried	out the following e	xperiment :			
Bubbles of carbon dioxide	Conical flask 40 cm³ hydro 20 g marbl				
The reaction can be rep	presented by the e	equation:			
	CaCO <sub>3( )</sub> +	. HCl $_{(\ )}$ $\rightarrow$ CaCl $_{2}$ $_{(\ )}$	) + H <sub>2</sub> O <sub>( )</sub>	+ CO <sub>2</sub> ( )	
a) Balance the equation					
b) Add state symbols to the	ne brackets				
c) Why was cotton wool p	out into the conical	flask?			
6d) The students measure		ass. Their results are sho			
Repeat	1	2	3	mean	
Mass lost (g)	8.6	8.2	8.3	8.4	
Calculate the uncertainty	in the students' re	sults.			
7. A solution of sodium ch	nloride has 35g diss	olved in 200cm³. Calcula	ite the concentration i	n g/dm³.	

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