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Rules: Never look at your notes for retrieval practice! Do as many as you can, even if they are educated guesses. When you have tried (hard!) to answer them all, check the mark scheme and rate each question:

-  Easy, remembered perfectly
 Harder - could remember part of it or was familiar when I saw the answer
 Very hard - didn't recognise the answer so need to go back over this

	Question	Rating
1	Give two observations you would make when solid magnesium carbonate is added to hydrochloric acid	  
2	Calculate the mass of sodium hydroxide needed to prepare 250 cm ³ of a 0.15 mol dm ⁻³ solution	  
3	Write a balanced equation for the reaction between aluminium hydroxide and hydrochloric acid	  
4	Calculate the maximum mass of potassium sulfate that could be formed when 1.35 g potassium hydroxide reacts with excess sulfuric acid. Give your answer to 3SF.	  
5	Give the formula of copper (I) sulfide	  
6	Explain why group 1 metals get more reactive as you go down the group	  
7	Give the shape and bond angles in phosphine, PH ₃	  
8	Write a balanced equation for the complete combustion of butane	  
9	Draw a displayed formula of ethanol	  
10	Give the number of protons, electrons and neutrons in ²⁵ Mg ²⁺	  

Answers:

	Question
1	<p>Give two observations you would make when solid magnesium carbonate is added to hydrochloric acid</p> <ul style="list-style-type: none"> <i>Bubbles/fizzing/effervescence</i> <i>Solid/powder disappears</i>
2	<p>Calculate the mass of sodium hydroxide needed to prepare 250 cm³ of a 0.15 mol dm⁻³ solution</p> <p><i>Moles = 0.15 x 0.25 = 0.0375</i> <i>Mr = 40</i> <i>Mass = 0.0375 x 40 = 1.5 g</i></p>
3	<p>Write a balanced equation for the reaction between aluminium hydroxide and hydrochloric acid</p> <p><i>Al(OH)₃ + 3HCl → AlCl₃ + 3H₂O</i></p>
4	<p>Calculate the maximum mass of potassium sulfate that could be formed when 1.35 g potassium hydroxide reacts with excess sulfuric acid. Give your answer to 3SF.</p> <p><i>Equation: 2KOH + H₂SO₄ → K₂SO₄ + 2H₂O</i> <i>Moles KOH = 1.35 / 56.1 = 0.02406</i> <i>Max moles K₂SO₄ = 0.01203</i> <i>Mr K₂SO₄ = 174.3</i> <i>Mass = 0.01203 x 174.3 = 2.10 g to 3 SF</i></p>
5	<p>Give the formula of copper (I) sulfide</p> <p><i>Cu₂S</i></p>
6	<p>Explain why group 1 metals get more reactive as you go down the group</p> <ul style="list-style-type: none"> <i>Down the group there are more electron shells</i> <i>The outer electron is further from the nucleus and there is more shielding</i> <i>The attraction between the nucleus and outer electron is weaker so the electron is easier to remove/lower ionisation energy</i>
7	<p>Give the shape and bond angles in phosphine, PH₃</p> <p><i>(trigonal) pyramidal</i> <i>107°</i></p>
8	<p>Write a balanced equation for the complete combustion of butane</p> <p><i>C₄H₁₀ + 6.5 O₂ → 4 CO₂ + 5 H₂O</i> <i>OR: 2 C₄H₁₀ + 13 O₂ → 8 CO₂ + 10 H₂O</i></p>
9	<p>Draw a displayed formula of ethanol</p> <pre> H H H - C - C - O - H H H </pre>
10	<p>Give the number of protons, electrons and neutrons in ²⁵Mg²⁺</p> <p><i>12 protons, 10 electrons, 13 neutrons</i></p>