<u>Properties of Period 3 elements and their oxides – A2 2022 Chemistry P1</u>

June/2022/Pap	per_/405/1/No.5	
0 5	This question is about Period 3 elements and their compounds.	
0 5.1	Which is not a correct statement about magnesium hydroxide?	[1 mark
	Tick (✓) one box.	· man
	It is used to neutralise stomach acid	
	It forms a solution with pH = 14 at 25 °C	
	It has the empirical formula H ₂ MgO ₂	
0 5.2	Give an equation for the reaction of aluminium oxide with sulfuric acid.	[1 mark
0 5.3	Identify a reagent or test that could be used to distinguish between aqueous of sulfur dioxide and sulfur trioxide with the same concentrations.	solutions
	State the observation in each case.	3 marks
	Reagent or test	
	Observation with sulfur dioxide solution	
	Observation with sulfur trioxide solution	

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0 5.4	The mass spectrum of the element phosphorus has a peak at $\frac{m}{z}$ = 124
	Give the formula of the species responsible for this peak. [2 marks]
0 5.5	Give an equation for the reaction of phosphorus(V) oxide with sodium hydroxide solution. [1 mark]
0 5.6	Draw the displayed formula of the molecule formed when phosphorus(V) oxide reacts with water.
	[1 mark]

0 5. 7 Table 4 shows the melting points of three substances.

Table 4

Substance	Melting point / K
sodium chloride	1074
chlorine	172
hydrogen chloride	158

Explain why the melting points of these substances are different.

You should refer to the structure of and bonding in each substance.	[6 marks]

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