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erms of bonding de has a nt. 2 marks	Question	Explain why sulfur trioxide has a higher melting point than sulfur dioxide.
t ionic y strong	Answer	Sulfur trioxide is a bigger molecule and has stronger van der Waals forces between the molecules.
	A 2 Periodicit	CHEMISTRY y
r dioxide g point. 2 marks	Question	Outline an experiment that shows $Na_2O$ , MgO and $Al_2O_3$ are ionic substances. 2 marks
les with Waals n the	Answer	Apply heat to melt the substances and show they conduct an electric

current.







## Periodicity

### Question



By reference to structure and bonding, explain why  $SiO_2$  is insoluble in water.

3 marks

#### Answer



Macromolecular with strong covalent bonding. Water cannot break the covalent lattice/bonds.



## Periodicity



Predict whether the melting point of  $Li_2O$  is higher than, the same as, or lower than that of Na<sub>2</sub>O and explain your prediction. 3 marks

### Answer



Higher as the  $Li^+$  ion is smaller than the  $Na^+$  ion so it attracts the  $O^{2-}$  ion more strongly.



# Periodicity



Compare the difference in melting points between  $P_4O_{10}$  and  $SiO_2$ .



# Answer ⊢



High Mp for  $SiO_2$  due to giant macromolecule where many strong covalent bonds need to be broken.  $P_4O_{10}$  forms small molecules held together by weak van der Waals forces.



<b>•</b> .•	
Question	State the bonding prese in basic oxides a explain what causes the to be basic.
Answer	
	lonic bonding. The contain O <sup>2-</sup> ions whic can react with H <sup>+</sup> ions t form water or OH <sup>-</sup> ions
A 2	
Periodici	CHEMISTRY y
Periodicit	CHEMISTRY ty The chloride and oxide of X have high Mpts. The oxide reacts readily with water. What is X? What is the bonding in X? 3 ma
Periodicia Question	CHEMISTRY ty The chloride and oxide of X have high Mpts. The oxide reacts readily with water. What is X? What is the bonding in X? 3 ma





across period 3.

remains

and

Answer

Electronegativity increase.

Proton number increases,

shielding of outer electrons

attraction between nucleus

bonding

electrons increases.

the

same.

of

pair



CHEMISTRY

oxygen.

Describe what you would

observe when S burns in

equation for the reaction

and state the bonding in

the oxide formed. 1 4 marks

Write

an

**Periodicity** 

Question



