



# STRUCTURE TYPES 2

- 1) Complete the following table about some atoms and ions. The first row has been done for you. (12)

Particle	Atom or ion	Atomic number	Mass number	Number of protons	Number of neutrons	Number of electrons	Electronic structure
$^{24}\text{Mg}^{2+}$	ion	12	24	12	12	10	$[2,8]^{2+}$
$^{31}\text{P}$							
$^{39}\text{K}^+$							
$^{32}\text{S}^{2-}$							
		4			5		2,2

- 2) Which type of structure do the following substances have (simple molecular, ionic, giant covalent, monatomic or metallic)? (5)

Substance	Melting point (°C)	Boiling point (°C)	Electrical conductivity as			Type of structure
			solid	liquid	solution (aq)	
A	-106	-34	does not conduct	does not conduct	insoluble	
B	649	1238	does not conduct	conducts	conducts	
C	367	984	conducts	conducts	insoluble	
D	2342	2482	does not conduct	does not conduct	does not conduct	
E	85	217	does not conduct	does not conduct	does not conduct	

- 3) Which type of structure do the following substances have (simple molecular, ionic, giant covalent, monatomic or metallic)? (6)

Formula	KBr	Zn	He	$\text{C}_2\text{H}_6$	$\text{SiO}_2$	$\text{H}_2\text{S}$
Structure						

- 4) Give the formula of the following ionic compounds. (4)
- a) lithium oxide ..... c) iron (III) sulphate .....
- b) magnesium nitrate ..... d) ammonium nitrate .....

- 5) Explain each of the following.
- a) Ionic substances have high melting and boiling points. .... (2)
- b) Simple molecular substances have low melting and boiling points. .... (2)
- c) Diamond has a very high melting point. .... (2)
- d) Metals have melting points. .... (2)
- e) Graphite conducts electricity. .... (3)
- f) Metals conduct electivity. .... (3)
- g) Ionic compounds conduct when molten or dissolved but not as solids. .... (2)
- h) Molecular substances do not conduct electricity. .... (2)

6) Draw a stick diagram and a dot-cross diagram for each molecule shown below. (6)

Substance	Iodine, I <sub>2</sub>	Phosphorus fluoride, PF <sub>3</sub>	Nitrogen, N <sub>2</sub>
Stick diagram			
Dot-cross diagram			