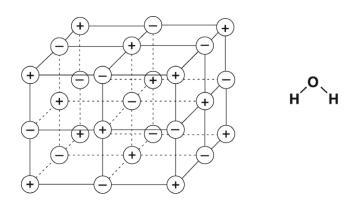


GCSE Chemistry A (Gateway Science) J248/03 C1-C3 and C7 Higher (Higher Tier)

Question Set 30

1 Look at the diagrams of sodium chloride and water.



sodium chloride

water

(a) Sodium chloride has a melting point of 801°C.

Use the diagram of sodium chloride to explain why.

Strong electrostatic force of attraction between [2] ions must be broken to melt sodium chloride.

(b) Water has a low melting point and boiling point.

Explain why.

Weak intermolecular forces between molecules [2] are easily broken.

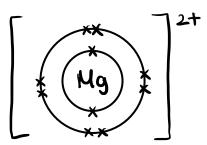
(c) Magnesium oxide has a similar structure to sodium chloride.

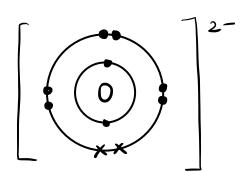
Draw 'dot and cross' diagrams to show the ionic bonding in magnesium oxide.

- · Include the charges on the ions.
- The electronic structure of magnesium is 2.8.2.
- The electronic structure of oxygen is 2.6.

[3]

Total Marks for Question Set 30:7





The Periodic Table of the Elements

																			_		
0	18	2 He	helium 4.0	10	Ne	neon 20.2	18	Ar	argon 39.9	36	궃	krypton 83.8	54	Xe	xenon 131.3	98	R	radon			
(-)			17	6	щ	fluorine 19.0	17	CI	chlorine 35.5	35	Ā	bromine 79.9	53	Т	lodine 126.9	82	Αt	astatine			
(9)			16	8	0	oxygen 16.0	16	S	sulfur 32.1	34	Se	selenium 79.0	52	Te	tellurium 127.6	84	Ьо	polonium	116	^	livermorium
(2)			15	7	z	nitrogen 14.0	15	۵	phosphorus 31.0	33	As	arsenic 74.9	51	Sb	antimony 121.8	83	ö	bismuth 209.0			
(4)			14	9	ပ	carbon 12.0	14	Si	slicon 28.1	32	ge	germanium 72.6	20	Sn	th 118.7	82	Pb	lead 207.2	114	F1	flerovium
(3)			13	2	В	baran 10.8	13	Αl	aluminium 27.0	31	Ga	gallium 69.7	49	드	indium 114.8	81	11	thallium 204.4			
									12	30	Zu	zinc 65.4	48	ၓ	cadmium 112.4	80	Hg	mercury 200.6	112	ပ	copernicium
									11	29	చె	oopper 63.5	47	Ag	silver 107.9	79	Αn	gold 197.0	111	Rg	roentgenium
									10	28	Z	nickel 58.7	46	Pd	palladium 106.4	78	풉	platinum 195.1	110	Ds	darmstadfium
									6	27	ပိ	oobalt 58.9	45	몺	modium 102.9	77	i	iridium 192.2	109	ğ	meitnerium
									8	26	Fe	lion 55.8	44	R	101.1	9/	os	osmium 190.2	108	£	hassium
									7	25	Mn	manganese 54.9	43	ည	technetium	75	Re	thenium 186.2	107	뮵	bohrium
		er	mass						9	24	ပ်	chromium 52.0	42	Wo	molybdenum 95.9	74	>	ungsten 183.8	106	Sg	seaborgium
	Key	tomic number	relative atomic mass						2	23	>	vanadium 50.9	41	qN	niobium 92.9	73	Та	tantalum 180.9	105	op O	dubnium
		atc	relativ						4	22	j	fitanium 47.9	40	Zr	arconium 91.2	72		hafinium 178.5	104	ጟ	rufherfordium
									က	21	သွင	scandium 45.0	39	>	yttrium 88.9		57-71	lanthanoids	00,00	89-103	actinoids
(2)			2	4	Be	beryllium 9.0	12	Mg	magnesium 24.3	20	Ca	calcium 40.1	38	Sr	strontium 87.6	26	Ba	barium 137.3	88	Ra	radium
Ð	1	← I	hydrogen 1.0	3	:=	lithium 6.9	11	Na	sodium 23.0	19	¥	potassium 39.1	37	Вb	rubidium 85.5	55	S	caesium 132.9	87	F	francium



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