

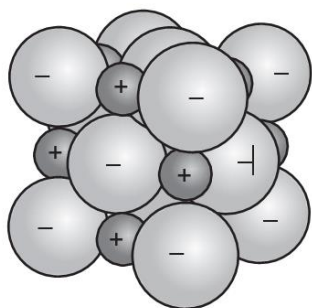
GCSE Chemistry A (Gateway Science)
J248/03 C1-C3 and C7 Higher (Higher Tier)

Question Set 9

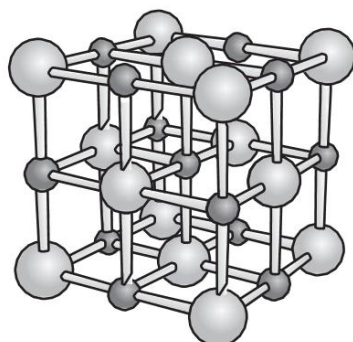
1 Sodium chloride, NaCl , is an ionic compound.

Sodium chloride forms a giant ionic lattice that can be represented using different models.

Look at the diagrams. They show two models of sodium chloride.



Space-filling model



Ball-and-stick model

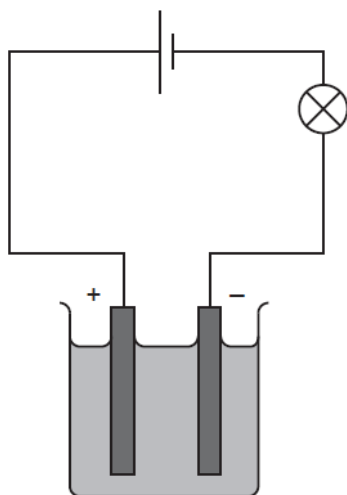
- (a) (i) A scientist thinks the ball-and-stick model should be used to model ionic compounds.

Describe **two limitations** of using the ball-and-stick model for ionic compounds. [2]

- (ii) Ionic compounds can also be modelled using a dot-and-cross diagram.

Draw a dot and cross diagram to show the ions in sodium chloride. [2]

- (b)* A student investigates the electrolysis of potassium bromide solution.



He notices that different products are formed at each electrode.

Explain the formation of the products during the electrolysis of potassium bromide solution.

[6]

Total Marks for Question Set 9: 10

The Periodic Table of the Elements

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(0)																																																																						
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18																																																												
Key																																																																													
atomic number																																																																													
Symbol																																																																													
name																																																																													
relative atomic mass																																																																													
1	H hydrogen 1.0	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18																																																											
11	Na sodium 23.0	12	Mg magnesium 24.3	19	K potassium 39.1	20	Ca calcium 40.1	38	Sr strontium 87.6	37	Rb rubidium 85.5	55	Cs caesium 132.9	87	Fr francium	5	B boron 10.8	6	C carbon 12.0	7	N nitrogen 14.0	8	O oxygen 16.0	9	F fluorine 19.0	10	Ne neon 20.2																																																		
13	Al aluminium 27.0	14	Si silicon 28.1	15	P phosphorus 31.0	16	S sulfur 32.1	17	Cl chlorine 35.5	18	Ar argon 39.9	31	Ga gallium 69.7	32	Ge germanium 72.6	33	As arsenic 74.9	34	Se selenium 79.0	35	Br bromine 79.9	36	Kr krypton 83.8	49	In indium 114.8	50	Sn tin 118.7	51	Sb antimony 121.8	52	Te tellurium 127.6	53	I iodine 126.9	54	Xe xenon 131.3																																										
21	Sc scandium 45.0	39	Y yttrium 88.9	41	Nb niobium 92.9	42	Zr zirconium 91.2	40	Hf hafnium 178.5	72	Rf rutherfordium	73	Ta tantalum 180.9	74	W tungsten 183.8	75	Re rhenium 186.2	76	Os osmium 190.2	77	Ir iridium 192.2	78	Pt platinum 195.1	79	Au gold 197.0	80	Hg mercury 200.6	81	Tl thallium 204.4	82	Pb lead 207.2	83	Bi bismuth 209.0	84	Po polonium	85	At astatine	86	Rn radon																																						
57-71	lanthanoids	89-103	actinoids	27	Co cobalt 58.9	26	Fe iron 55.8	44	Ru ruthenium 101.1	45	Rh rhodium 102.9	46	Pd palladium 106.4	47	Ag silver 107.9	48	Cd cadmium 112.4	89	La lanthanum	90	Ce cerium	91	Pr praseodymium	92	Nd neodymium	93	Pm promethium	94	Sm samarium	95	Eu europium	96	Gd gadolinium	97	Tb terbium	98	Dy dysprosium	99	Ho holmium	100	Er erbium	101	Tm thulium	102	Yb ytterbium	103	Lu lutetium	104	Hf hafnium	105	Ta tantalum	106	W tungsten	107	Re rhenium	108	Os osmium	109	Ir iridium	110	Pt platinum	111	Au gold	112	Hg mercury	113	Tl thallium	114	Pb lead	115	Bi bismuth	116	Po polonium	117	At astatine	118	Rn radon
105	Db dubnium	106	Sg seaborgium	107	Bh bohrium	108	Hs hassium	109	Mt meitnerium	110	Ds darmstadtium	111	Rg roentgenium	112	Cn copernicium	113	Nh nihonium	114	Fl flerovium	115	Mc moscovium	116	Lv livermorium	117	Ts tennessine	118	Og oganeson																																																		

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