0 2	This question is about sodium and chlorine.						
	Figure 2 shows the positions of sodium and chlorine in the periodic table.						
	Figure 2						
	Na CI						
0 2.1	State one difference and one similarity in the electronic structure of sodium and of chlorine. [2 marks]	s]					
	Similarity	_					
0 2.2	Sodium atoms react with chlorine atoms to produce sodium chloride (NaCl). Describe what happens when a sodium atom reacts with a chlorine atom. Write about electron transfer in your answer. [4 marks]	s]					
		_					





0 2.3		dium and chlorine is an exothermic reaction. ofile for the reaction between sodium and chlorine. [2 marks
		Figure 3
	Relative energy	Reactants
		Progress of reaction

8

Question	Answers	Extra information		AO / Spec. Ref.
02.1	(difference) sodium has one and chlorine has seven electrons in outer level / shell or number of electrons	number of electrons must be correct if quoted	1	AO2 5.1.1.7 5.1.2.1
	(similarity) both have three / same number of levels / shells or have electrons in third level / shell or both have incomplete (outer) levels / shells	allow both have 2 electrons in inner shell or both have 8 electrons in second shell or both are one electron away from full outer level / shell	1	
02.2		allow marks from suitable diagram(s)		AO1 5.2.1.2
	sodium (atom) loses	allow moves / transfers for loses do not accept sodium ion loses	1	
	one (outer shell electron)		1	
	chlori <u>n</u> e (atom) gains	do not accept chlori <u>d</u> e	1	
	one (electron)		1	
		transfer of 1 electron from chlorine to sodium max 2 marks		
		reference to sharing or covalent bonding max 3 marks		

Question		Answers	Extra information	Mark	AO / Spec. Ref.
02.3					AO1 5.5.1.2
	Relative energy	Reactants		1	
			(Products)	1	
		Progress of	reaction		
			ignore labels		
			any curve / line going up and then down		
			products line below reactants		
			allow curve to start / finish anywhere along reactant / product lines		
Total				8	