Question	Part	Sub Part	Marking Guidance	Mark	Comments
4	(a)		242	1	Units not essential
4	(b)		Bond is shorter or bonding pair closer to nucleus So attraction (between nucleus and) (to) bond pair is stronger	1 1	Allow Cl is a smaller atom Allow fewer electron shells do not allow smaller molecules Allow shared pair (or bonding electrons) held more tightly Mention of Cl^- loses M2
4	(c)		Net attraction between the chlorine nucleus and the extra electron	1	Allow Cl^- ion more stable than Cl
4	(d)	(i)	step 1 $Ag(s) \rightarrow Ag(g)$ only change step 2 $Ag(s) \rightarrow Ag^+(g) + e^-$ only change step 3 $^1/_2Cl_2(g) \rightarrow Cl(g)$ only change	1 1 1	 This step can be first, second or third
4	(d)	(ii)	127 + 289 + 732 + 121 – 364 = 905 kJ mol^{-1}	1 1	 -905 scores 1 mark only
4	(e)	(i)	Ions can be regarded as point charges (or perfect spheres)	1	Allow no polarisation ***OR*** only bonding is ionic ***OR*** no covalent character
4	(e)	(ii)	Greater Chloride <u>ions</u> are smaller than bromide They are attracted more strongly to the silver ions	1 1 1	Electronegativity argument or mention of intermolecular, CE =0 Mark independently but see above Mark independently
4	(e)	(iii)	AgCl has covalent character Forces in the lattice are stronger than pure ionic attractions	1 1	Ignore reference to molecules Allow stronger bonding OR additional/extra bonding