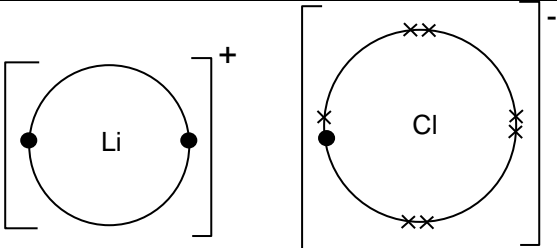
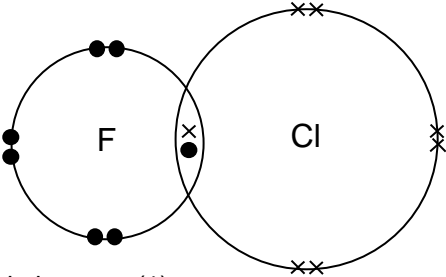


# SEC 3E CHEMISTRY 6092

## TERM 3 TIMED PRACTICE MARK SCHEME

Question	1	2	3	4	5
Answer	B	D	D	C	C

SECTION B & C [30 marks]					
6	(a)		$\text{CaCO}_3 (\text{s}) \rightarrow \text{CaO} (\text{s}) + \text{CO}_2 (\text{g})$		2
	(b)		$2\text{Na} (\text{s}) + 2\text{H}_2\text{O} (\text{l}) \rightarrow 2\text{NaOH} (\text{aq}) + \text{H}_2 (\text{g})$		2
	(c)		$\text{CH}_4 (\text{g}) + 2\text{O}_2 (\text{g}) \rightarrow \text{CO}_2 (\text{g}) + 2\text{H}_2\text{O} (\text{g})$		2
7	(a)		Diamond has a giant molecular structure of strong covalent bonds (1), which makes diamond very hard (1)		2
	(b)		Graphite has weak forces of attraction between the layers of carbon atoms (1) The layers can slide over one another easily (1)		2
8	(a)		Any four (with clear comparisons) from: Dalton's formula of carbon monoxide disagrees with the modern formula of CO (1), as his formula showed carbon bonded to a hydrogen instead (1) Dalton's formula of ammonia has 2 hydrogen atoms fewer (1) than the modern formula of $\text{NH}_3$ (1) Dalton's formula of water has 1 hydrogen atom fewer (1) than the modern formula of $\text{H}_2\text{O}$ (1)		4
	(b)		potassium bromide 19, 35 copper(II) carbonate $\text{CuCO}_3$ [ALLOW copper carbonate] $\text{SO}_2$ 16, 8(2)		6
9	(a)		Helium and neon are unreactive OR Helium and neon have completely filled outer shells of electrons		1
	(b)		$\text{BeCl}_2$		1
	(c)		 <p>Correct electronic structures for both ions (2) Correct charges for both ions (1)</p>		3
	(d)		 <p>Correct pair of shared electrons (1) Rest of molecule correct (1)</p>		2
	(e)		In LiCl, the lithium and chloride ions are held together by strong ionic bonds in a giant ionic lattice (1) and a large amount of heat energy is required to overcome the strong electrostatic forces of attraction  In FCl, the molecules are held together by weak Van der Waals' forces (1) and little heat energy is required to overcome these intermolecular forces of attraction  A statement describing a difference in amount of heat energy required (1)		3

