**MARK SCHEMES – Chemistry Unit 2 homework**

Q1 (a)     K loses

**1**

one electron

**1**

(to) form a positive ion

**1**

F gains one electron

**1**

(to) form a negative ion

**1**

(b)     lattice / giant structure

*allow many ions*

**1**

strong attraction

**1**

between K+ and F– ions / oppositely charged ions

**1**

(so) a lot of energy is needed to overcome / break

*allow strong bonds*

**1**

Q2( a)     intermolecular

**1**

(b)     sulfur

**1**

(c)     ions

**1**

fixed in solid

**1**

mobile in liquid

**1**

(d)     layers of atoms

*allow ions*

**1**

slide over each other

**1**

(e)     copper

**1**

Q3 (a)



*two shared pair of electrons*

*all outer shells complete*

**1**

**1**

(b)     gas

**1**

**Q4** (a)     carbon

*allow C*

**1**

(b)     (i)      (atoms are in) layers (that) can slide over each other

**1**

because between the layers there are only weak forces

*accept because there are no (covalent) bonds between the layers*

*accept Van der Waals forces between the layers*

*do****not****allow intermolecular bonds between the layers*

*if no other marks are awarded allow weak intermolecular forces for****1****mark*

**1**

(ii)     because each atom forms four (covalent) bonds **or** (diamond is a) giant (covalent) structure **or** lattice **or** macromolecular

*any reference to ionic / metallic bonding or intermolecular forces scores a maximum of****1****mark*

*accept carbon forms a tetrahedral shape*

**1**

(and) covalent bonds are strong

*accept covalent bonds need a lot of energy / difficult to break*

**1**

(iii)    because graphite has delocalised electrons

*allow sea of electrons
allow each carbon atom has one free electron*

**1**

which can move through the whole structure (and carry the current / charge / electricity)

**1**