

Bonding

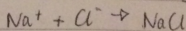
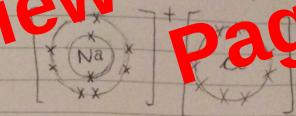
- involves outer electrons

Ionic bonding

gain an outer shell with 8 electrons (full outer shell)
between metal and non-metal

The two ions are attracted to oppositely charged ions by electrostatic forces.

In a lattice structure ionic crystal



• Solids at room temperature

• Giant structures - high melting temperatures

• Conduct when molten or aqueous - ions that carry current are free to move in liquid state

• Brittle - because of their lattice of oppositely charged ions

→ energy is required to break lattice of ions

Covalent bonding

gain a full outer shell.

between two non-metals.

shared pair of electrons

held together by electrostatic attraction

between nuclei and shared electron.

simple molecular or macromolecular

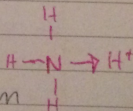
• Gases, liquids or solids @ room temperature because of covalent bonds which are only between the

• Poor conductors because they're not charged. atoms

Coordinate / dative covalent bonding

A pair of electrons from one atom to another.

Atom donates lone pair → electron deficient atom



Metallic bonding

between two metals

lattice of positively charged ions surrounded by a sea of delocalised electrons

• good conductors of heat and electricity

• strong - depends on charge and size of ion

• malleable - delocalised electrons surround the positive ions

• high melting points