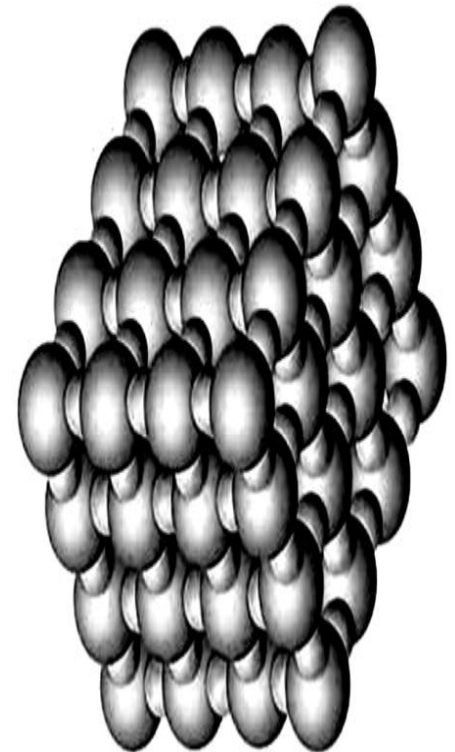




Bonding – Exam questions

# 2012 - Higher

- The diagram shows part of a crystal of sodium chloride.
- Name the type of bonding in sodium chloride.
- Describe this type of bonding.



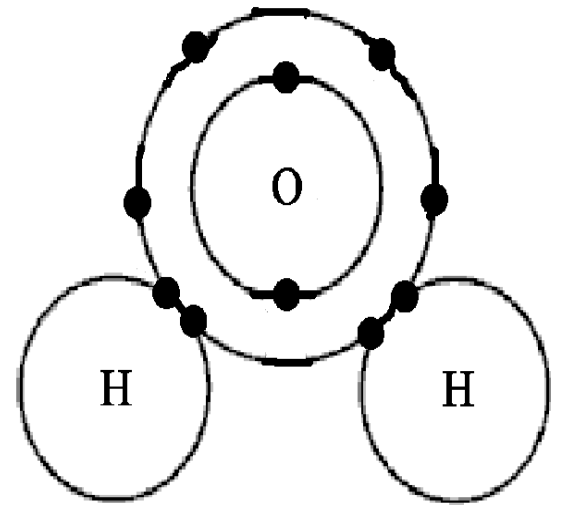
# 2012 - Ordinary

- **Ionic** bonding involves an attraction between positive and negative \_\_\_\_\_.
- **Covalent** bonding involves the sharing of pairs of \_\_\_\_\_.

Protons  
Ions  
Electrons  
Neutrons

# 2011 - Higher

- The diagram shows the way the atoms bond together in a molecule of water.
- What is a molecule?

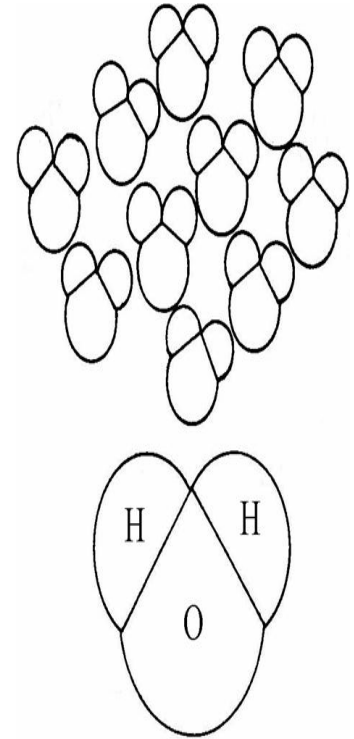


- Each hydrogen atom shares two electrons with the oxygen atom.
- What name is given to the type of bonding that involves the sharing of pairs of electrons?
- In the space below, draw a diagram of a methane molecule, **CH<sub>4</sub>**, showing the bonding between its atoms.

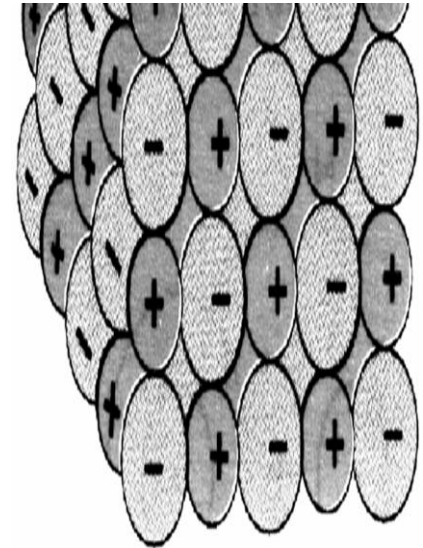
- Describe a second type of chemical bonding and name a compound which has this type of bonding.
- Bonding that involves the sharing of electron pairs is called \_\_\_\_\_ .

# 2009 - Higher

- Water molecules are very tiny, one teaspoon of water contains approximately  $2 \times 10^{23}$  molecules.
- Name the **type of bonding** in the water molecule.
- **Describe** this **type of bond**.
- Name **one other** compound with this **type of bonding**.



- The diagram shows sodium ions (+) and chloride ions (-) in part of a crystal of table salt, sodium chloride.
- How are **sodium ions** and **chloride ions formed** from their atoms?
- What **force** holds the ions together in sodium chloride?
- Name **one other** compound that is **composed of ions**.





# 2009 - Ordinary

- What **name** is given to the bond that involves an **attraction between positive and negative ions**?

# 2008 - Higher

- What is an **ionic bond**?
- Some atoms join together by *sharing pairs of electrons*. This is called *covalent bonding*.
- Draw a **diagram** showing the **covalent bonding in a molecule of water**.

- A pupil investigated the *ability of covalent and ionic substances to conduct electricity*.
- Four substances were selected. One was a liquid. The other three substances were solids and these were dissolved in pure water before testing.

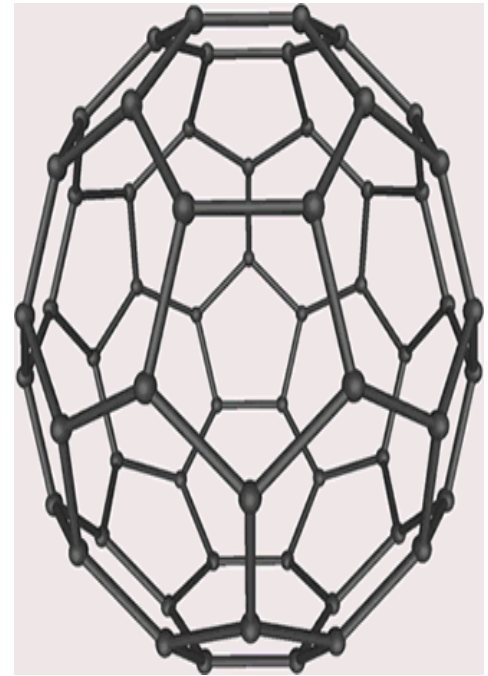
Liquid	Cooking oil	Table salt	Table sugar	Copper sulphate
Liquid type	A	B	A	B

- When the liquids were tested the bulb did not glow in some cases (Liquid type A) and the bulb glowed in other cases (Liquid type B)

- Name the **ionic substances** in the table. Give a **reason** for your answer.
- **Three** of the *substances tested* are *solid at room temperature*. Why were these **substances dissolved in water** before the investigation?

# 2007 - Higher

- The diagram shows a molecule of C<sub>60</sub>. It has 60 carbon atoms covalently bonded together.
- This molecule is nicknamed the 'Buckey Ball'.
- Explain the underlined term.



# 2007 - Ordinary

- Neutrons and \_\_\_\_1\_\_\_\_ are **located in the nucleus** of atoms.
- The \_\_\_\_2\_\_\_\_ move around **outside the nucleus** of atoms.
- The \_\_\_\_3\_\_\_\_ have **no electric charge**.
- In \_\_\_\_4\_\_\_\_ bonding **pairs of electrons are shared**.
- In \_\_\_\_5\_\_\_\_ bonding **positive ions are attracted to negative ions**.

**COVALENT**

**ELECTRONS**

**IONIC**

**NEUTRONS**

**PROTONS**



# 2006 - Ordinary

- The **bond** in a molecule of hydrogen gas is formed by a shared pair of electrons.
- **Name** the type of bond found in hydrogen gas.
- The bonds in sodium chloride are formed by sodium atoms **losing electrons** and chlorine atoms **gaining electrons**.
- **Name** the type of bond found in a sodium chloride crystal.