

## 2nd Year Chemistry Revision Questions

Alloy car wheels are made from an alloy of aluminium or magnesium. Name another alloy and give a use for it.

Alloy \_\_\_\_\_

Use \_\_\_\_\_

\_\_\_\_\_



Using their atomic symbols, arrange the metals, copper, calcium, zinc and magnesium in order of decreasing reactivity with dilute hydrochloric acid.

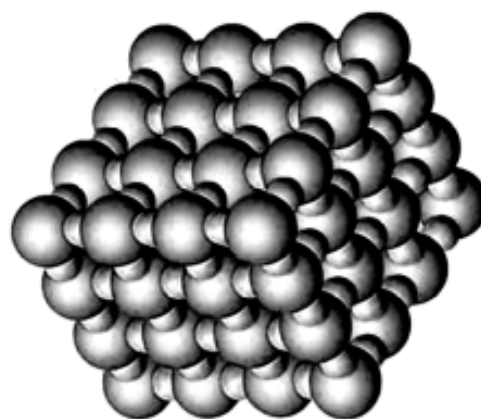
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The diagram shows part of a crystal of sodium chloride. Name the type of bonding in sodium chloride. Describe this type of bonding.

Name \_\_\_\_\_

Describe \_\_\_\_\_

\_\_\_\_\_



Describe the reaction of a named alkali metal with water and name a product of the reaction.

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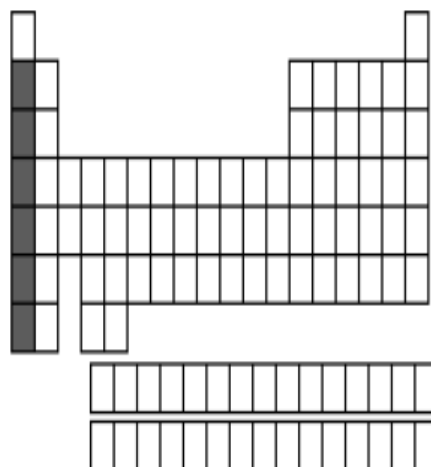
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The diagram is an outline periodic table.  
One area, a group of elements, is shaded.

Name this group of elements and give one chemical property that they have in common.



Group \_\_\_\_\_

Property \_\_\_\_\_

What are *isotopes*?

What? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

The photograph shows severe rusting of the steel body of a motorcar.

Give one condition necessary for rusting to occur. Describe one method of preventing rust happening.

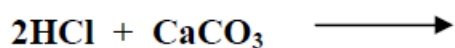
Condition \_\_\_\_\_

\_\_\_\_\_

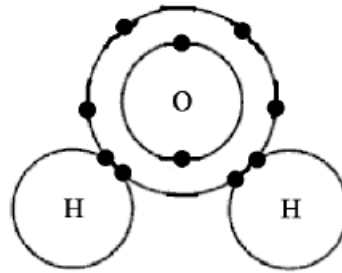
Method \_\_\_\_\_



Complete the equation:



The diagram shows the way the atoms bond together in a molecule of water.



(i) What is a molecule? (3)

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(ii) 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? (3)

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(iii) In the space below, draw a diagram of a methane molecule,  $\text{CH}_4$ , showing the bonding between its atoms. (6)

Describe a second type of chemical bonding and name a compound which has this type of bonding.

Describe \_\_\_\_\_

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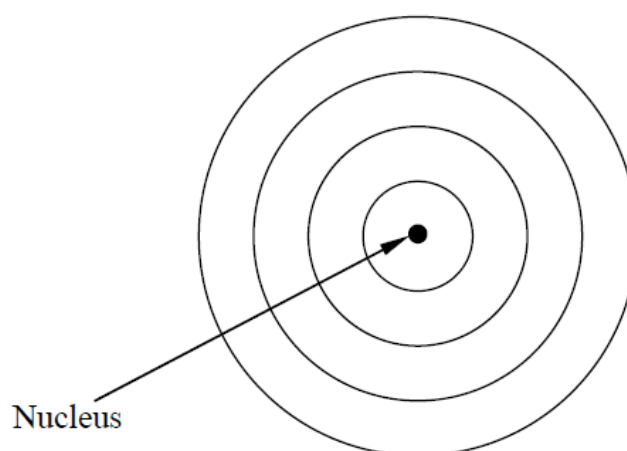
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Compound \_\_\_\_\_

A potassium atom has atomic number 19 and a mass number of 39.

Complete the diagram using dots or crosses to clearly show the arrangement of electrons in the potassium atom.



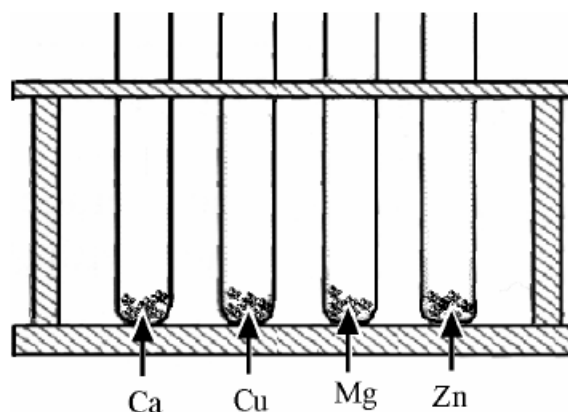
A investigation was carried out to see how different metals react with water and dilute acid. The diagram shows the metals used in this investigation. When a metal reacts with water or a dilute acid it produces a gas. The water in this experiment was added to the metal at room temperature.

- (i) Name the **gas** produced by the reaction of a metal used in this experiment with water or a dilute acid. (3)

Name \_\_\_\_\_

- (ii) Name a **dilute acid suitable** for use in this experiment. (3)

Name \_\_\_\_\_



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Name a *metal*, used in this experiment that *reacts with water* at room temperature. (3)

Name \_\_\_\_\_

Name a *metal*, used in this experiment that *does not react* with the *dilute acid* that you have named above. (3)

Name \_\_\_\_\_

List the *metals* used in this experiment in *decreasing order of reactivity with the dilute acid* named (most reactive first). (3)

List \_\_\_\_\_

Give **one safety precaution** that you would take when performing this experiment. (3)

Give \_\_\_\_\_

Approximately 98.89% of carbon on the surface of the earth and in the atmosphere is carbon-12 the remaining approximately 1.11% is carbon-13. The numbers 12 and 13 are mass numbers. The atomic number of carbon is 6.

(i) **How many neutrons** are in the nucleus of a carbon-13 atom?

How? \_\_\_\_\_

(ii) Enter the **missing word** in the following sentence.

Carbon-12 and carbon-13 are \_\_\_\_\_ of carbon.

(i) What is *item A used for* in the titration of an acid with a base?

What? \_\_\_\_\_  
\_\_\_\_\_

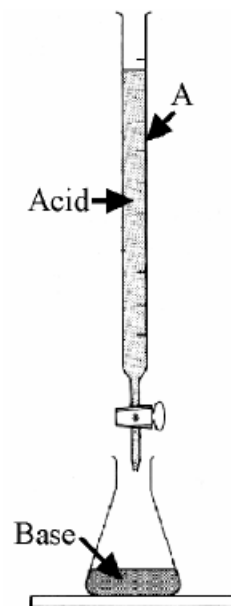
(ii) What *happens when an acid reacts with a base*?

What? \_\_\_\_\_  
\_\_\_\_\_

Give *two uses* of carbon dioxide.

Use one \_\_\_\_\_

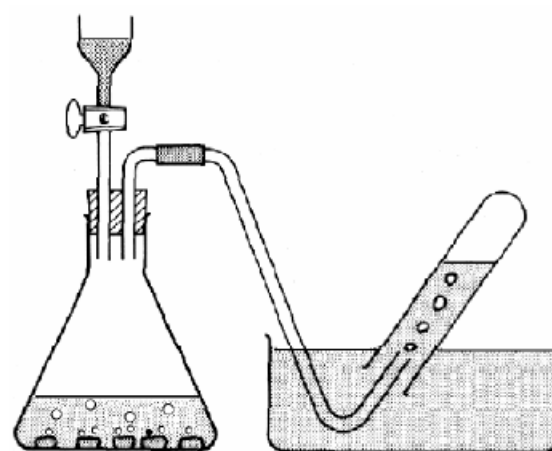
Use two \_\_\_\_\_



The apparatus shown in the diagram was used to investigate the reaction of zinc with hydrochloric acid. Hydrogen gas is produced.

(i) Describe a *test for hydrogen*.

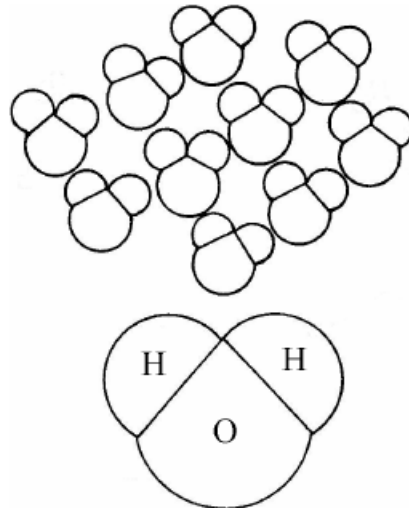
\_\_\_\_\_  
\_\_\_\_\_



(ii) Write a *chemical equation* for the reaction of zinc with hydrochloric acid.

\_\_\_\_\_

- (a) The diagram shows a group of water molecules with one enlarged below with its constituent atoms identified by their atomic symbols. Water molecules are very tiny, one teaspoon of water contains approximately  $2 \times 10^{23}$  molecules.



- (i) Name the *type of bonding* in the water molecule. (3)

Name \_\_\_\_\_

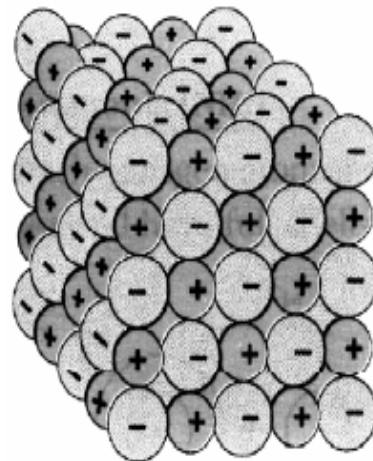
- (ii) *Describe* this *type of bond*. (6)

Describe \_\_\_\_\_

- (iii) Name *one other* compound with this *type of bonding*. (3)

Name \_\_\_\_\_

The diagram shows sodium ions (+) and chloride ions (-) in part of a crystal of table salt, sodium chloride.



- (i) How are *sodium ions* and *chloride ions* *formed* from their atoms? (6)

How? \_\_\_\_\_

- (ii) What *force* holds the ions together in sodium chloride? (3)

\_\_\_\_\_

- (iii) Name *one other* compound that is *composed of ions*. (3)

\_\_\_\_\_



The photograph shows a statue that was cast in the alloy bronze.



(i) What is an *alloy*? (3)

What? \_\_\_\_\_

\_\_\_\_\_

(ii) Name an *alloy*, other than bronze, and give *one use* for it. (6)

Name \_\_\_\_\_

Use \_\_\_\_\_

(iii) Metals are malleable and ductile. Explain the underlined terms. (6)

Malleable \_\_\_\_\_

Ductile \_\_\_\_\_