

Revision

Write word equations and chemical equations for the reactions below:

- a) Hydrochloric acid reacts with magnesium hydroxide

Word eqn:

Chem eqn:

- b) reaction of sulfuric acid on the metal calcium

Word eqn:

Chem eqn:

- c) iron (II) carbonate and hydrochloric acid

Word eqn:

Chem eqn:

- d) sulfuric acid and potassium hydroxide

Word eqn:

Chem eqn:

- e) nitric acid and calcium carbonate

Word eqn:

Chem eqn:

- f) Magnesium and nitric acid

Word eqn:

Chem eqn:

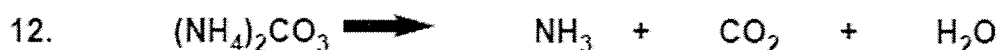
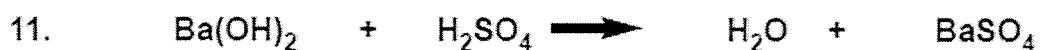
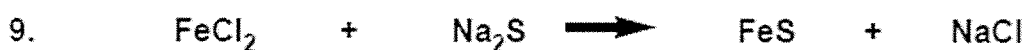
Balancing Equations

Student Name.....

Balance each of the following chemical equations.

Remember you must NOT change any formulas.

Balance an equation by writing numbers in front of a formula ONLY.



Atoms and Elements

Q1 Complete the following sentences.

- Atoms always have a charge of
- An atom which has lost or gained electrons is called an
- A neutral atom has the same number of and
- If an electron is added to a neutral atom, the atom becomes charged.

Q2 Complete this table.

Particle	Charge
Proton	
	0
Electron	



Q3 What am I?

Choose from: nucleus proton electron neutron

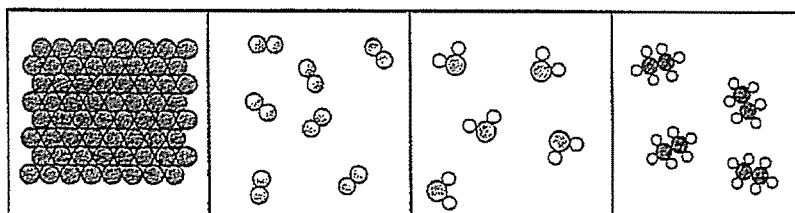
- I am in the centre of the atom. I contain protons and neutrons.
- I move around the nucleus in a shell.
- I am positively charged.
- I have no charge.
- In a neutral atom there are as many of me as there are electrons.

Q4 Draw a diagram of a helium atom.

Label each type of particle on your diagram.

Helium has 2 of each type of particle.

Q5 Look at these diagrams of substances. Circle the ones that contain only one element.



copper

oxygen

water

ethane

The Periodic Table

Q1 Choose from these words to fill in the blanks.

left-hand O right-hand horizontal similar elements K
Cl different vertical metals P non-metals compounds

- a) A group in the periodic table is a line of elements.
- b) Most of the elements in the periodic table are
- c) There are about 100 different in the periodic table.
- d) Non-metals are on the side of the periodic table.
- e) Elements in the same group have properties.
- f) The symbol for chlorine is and the symbol for potassium is

Q2 Sodium appears in the periodic table as shown below.

23	Na
11	

- a) Circle the atomic number on the diagram to the left.
- b) How many protons does Na have?
- c) How many electrons does Na have?
- d) How many neutrons does Na have?

Q3 Elements in the same group undergo **similar reactions**.

- a) Tick the pairs of elements that would undergo similar reactions.

A potassium and rubidium ☐

C calcium and oxygen ☐

B helium and fluorine ☐

D calcium and magnesium ☐

- b) Explain why sodium and potassium undergo similar reactions with water.

.....
.....

Q4 True or false?

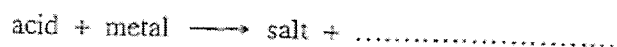
True False

- a) Group 7 elements are known as the noble gases.
- b) All of the noble gases have the same number of electrons in their outer shell.
- c) Helium is a noble gas.
- d) Noble gases have the maximum number of electrons in their outer energy level.
- e) All noble gases are unreactive.

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Year 10 Chemistry revision

23. Complete this word equation for the chemical reaction shown:



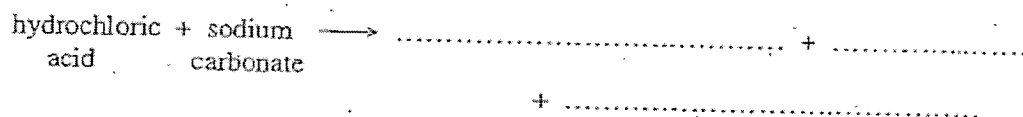
24. What test can you do to determine the gas produced when an acid acts on a metal?

25. Complete this word equation for the chemical reaction shown:

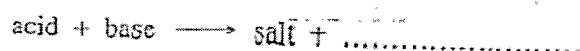


26. What test can you do to determine the gas produced when an acid acts on a carbonate?

27. Complete this word equation for the chemical reaction between the following chemicals:

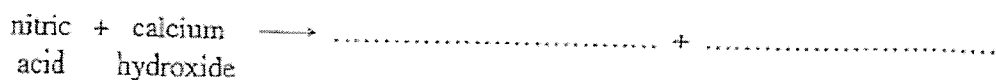


28. Complete this word equation for the chemical reaction shown:



29. What name is given to the reaction between an acid and a base? Why is it called this?

30. Complete this word equation for the chemical reaction between these chemicals:



31. Complete this sentence:

Chemical reactions in which a substance breaks down to form two or more new substances is called a _____ reaction.

Chemical substances can undergo a range of chemical reactions, e.g. acids on metals, acids on carbonates, combustion, corrosion, precipitation, neutralisation, decomposition.

Complete the table to indicate which type of chemical reaction is occurring:

Chemical reaction	Type of reaction
hydrochloric acid + sodium hydroxide \longrightarrow sodium chloride + water	
sulfuric acid + zinc \longrightarrow zinc sulfate + hydrogen	
nitric acid + sodium carbonate \longrightarrow sodium nitrate + carbon dioxide + water	
X iron + oxygen \longrightarrow iron oxide	
X calcium carbonate \longrightarrow calcium oxide + carbon dioxide	
X magnesium burnt in air \longrightarrow magnesium oxide	
X soluble salt A + soluble salt B \longrightarrow insoluble salt C + soluble salt D	

Answer all questions in the spaces provided.

This test requires the use of the Chemical Data Table on p13.

1. (5 marks)

Name the following compounds.

a) BaSO_4

b) CH_4

c) $\text{Fe}(\text{OH})_2$

d) NH_4NO_3

e) $\text{Al}_2(\text{CO}_3)_3$

2. (5 marks)

Write the chemical formula for:

a) calcium nitrate

b) iron (III) bromide

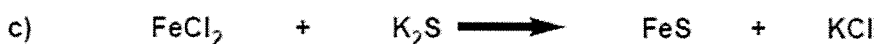
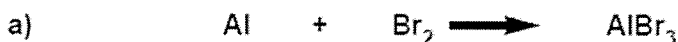
c) copper (II) hydroxide

d) ammonium sulfate

e) ammonia

3. (3 marks)

Balance the following equations



4. (14 marks)

For each of the following reactions:

i) write a word equation (2 marks) ii) write a symbol equation & balance it. (5 marks)

~~X~~ Pentane (C_5H_{12}) burns in air to form carbon dioxide and water.

i)

ii)

b) Hydrochloric acid reacts with magnesium hydroxide.

i)

ii)