The Periodic Table final revision

8Fa

1 When magnesium ribbon reacts with steam a solid called magnesium oxide and hydrogen gas are formed. In this reaction, which element has the lowest boiling point?

A hydrogen

B water

C magnesium

D magnesium oxide

2 The correct symbol for carbon is:

A C **B** Ca

C Car **D** ø

3 According to Dalton's theory, elements:

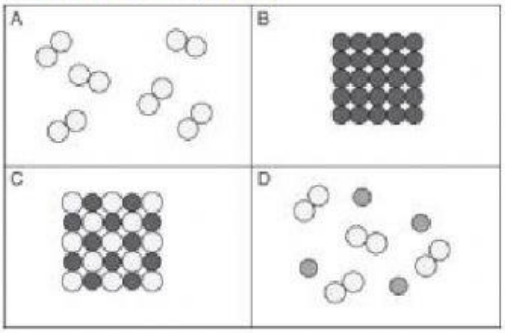
A are always solids.

B contain only one kind of atom.

C can be split up into simpler substances.

D contain at least two different kinds of atom.

4 Which of these diagrams shows the particles in a compound?



8Fb

1 The main difference between a chemical change and a physical change is that in a chemical change you always get:

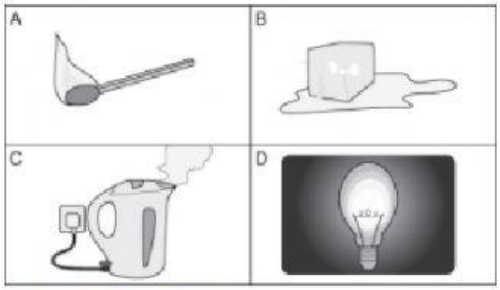
A a change of state.

B heat given out.

C a change in colour.

D a new substance being formed.

2 Which of the following is a chemical change?



3 Which of the following always happens during a chemical reaction?

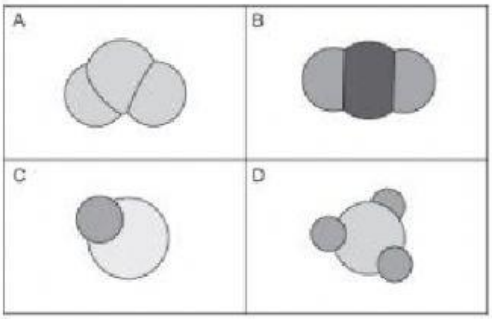
A Compounds react and split up into free atoms.

B Elements join together to make new elements.

C Atoms are broken down into smaller particles.

D The atoms in the reactants are rearranged to make the products.

4 Which of the following could have the formula XY_2?



8Fc

1 Which *two* elements in the periodic table below would have the most similar chemical properties?



A 1 & 4 **B** 2 & 3

C 1 & 6 **D** 5 & 6

2 Which element is very unreactive?

A helium **B** lithium

C hydrogen **D** fluorine

LIVEWORKSHEETS

3 Which of the following describes a group 1 element?

A a very reactive metal

B a very unreactive metal

C a very reactive non-metal

D a very unreactive non-metal

4 The elements are arranged in the periodic table in order of increasing:

A density. C melting point.

B reactivity. D atomic number.

8Fd

1 The melting point of a substance is:

A higher than its boiling point.

B lower than its freezing point.

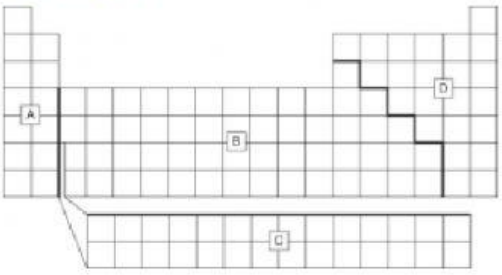
C higher than its freezing point.

D the same temperature as its freezing point.

2 Which of the following substances will be a liquid at 350 °C?

Substance	Melting point (°C)	Boiling point (°C)
A	50	280
B	100	340
C	320	600
D	400	650

3 Where are most non-metals found in the periodic table?



4 Some information about group 0 elements is given below.

Element	He	Ne	Ar	Kr
Density ($g/cm^3 \times 1000$)	0.2	0.9	1.8	3.7

The density of group 0 elements:

A does not change down the group.

B increases down the group.

C decreases down the group.

D shows no pattern within the group.

8Fe

1 When lithium reacts with water, one product is:

A carbon dioxide.

B lithium dioxide.

C dihydrogen oxide.

D lithium hydroxide.

2 Compared to sulfur dioxide, lithium oxide is likely to have:

A a lower melting point and higher pH.

B a higher melting point and higher pH.

C a higher melting point and lower pH.

D a lower melting point and lower pH.

3 In which of the following pairs of elements is the second element more reactive than the first element?

A sodium and potassium

B sodium and lithium

C chlorine and bromine

D fluorine and chlorine

4 Francium is a very rare element found at the bottom of group 1. Francium is likely to be:

A a metal that reacts violently with water.

B a metal that does not react easily.

C a non-metal that reacts with metals.

D a non-metal gas that is very unreactive.

LIVEWORKSHEETS

Dalton's atomic model:

Read the chemical formulae below to find out how many atoms are in them, then decide whether they're an element or a compound.

Chemical formula	Number of atoms	Element or compound?
NO_2		
CH_4		
Cl_2		
Al_2O_3		
H_2		
O_2		
$MgCl_2$		

Choose the chemical formula the represents the description provided.

Two atoms of hydrogen and one atom of water (Water).

HO H_2O HO_2

One atom of zinc and two atoms of iodine (Zinc iodide).

ZnI Zn_2I ZnI_2

Two atoms of sodium and one atom of oxygen (Sodium oxide).

NaO Na_2O NaO_2

One atom of nitrogen and three atoms of hydrogen (Ammonia).

NH N_3H NH_3

One atom of carbon and one atom of oxygen (Carbon monoxide).

CO C_2O CO_2

LIVEWORKSHEETS

Writing chemical formulae:

Complete the table by filling out the valency if each group on the periodic table.

Group	1	2	3	4	5	6	7	8
Valency								

Use the crossover technique to choose the chemical formula for each compound.

Compound: Lithium chloride

Symbol: Li Cl

Group: Group 1 Group 7

Valency: _____ _____

Chemical formula: LiCl Li_2Cl $LiCl_2$

Compound: Phosphorous hydride

Symbol: P H

Group: Group 5 Group 1

Valency: _____ _____

Chemical formula: PH P_3H PH_3

Compound: Aluminium nitride

Symbol: Al N

Group: Group 3 Group 5

Valency: _____ _____

Chemical formula: AlN Al_3N AlN_3

LIVEWORKSHEETS

Chemical trends:

G#1: Alkali metals are highly reactive with water.

Alkali metal + Water ⟶ Metal hydroxide + Hydrogen gas

Lithium + Water ⟶ _____ + _____

Sodium + Water ⟶ _____ + _____

Potassium + Water ⟶ _____ + _____

Reactivity **(increases/decreases)** as you go down the group. This is because the number of **(electrons/shells)** increases, causing the boond between the nucleus and the electron to **(strengthen/weaken)**.

G#2: Alkali Earth metals produce acidic metal oxides with oxygen.

Alkali Earth metal + Oxygen ⟶ Metal oxide

Magnesium + Oxygen ⟶ _____

Calcium + Oxygen ⟶ _____

Barium + Oxygen ⟶ _____

G#7: Halogens are highly reactive.

Metal + Halogen ⟶ Salt

Sodium + Chlorine ⟶ Sodium chloride

Magnesium + Flourine ⟶ _____

Potassium + Bromine ⟶ _____

Calcium + Iodine ⟶ _____

G#8: Noble gases are highly unreactive as they have a valency of _____ so, they _____.

LIVEWORKSHEETS

Complete the word equations below using the suggested words:

Water	Oxygen	Hydrochloric acid	Iron	Potassium hydroxide
Water	Iodine	Copper fluoride	Zinc chloride	

Sodium hydroxide + _____ → Sodium chloride + Water

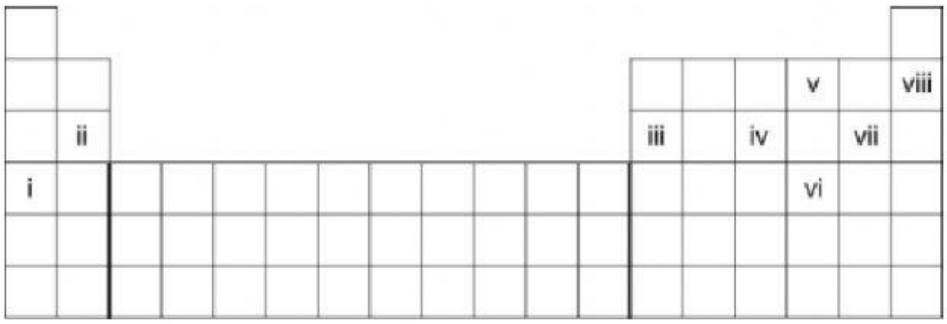
Zinc + Chlorine → _____

Calcium + _____ → Calcium oxide

Potassium + _____ → _____ + Hydrogen

_____ + _____ → Iron iodide

Copper oxide + Hydrofluoric acid → _____ + _____



1 Which of the elements i to viii fit the following descriptions?

a An unreactive element. _____

b An alkali metal. _____

c Has the symbol P. _____

d Two similar elements. _____ and _____

e A halogen. _____

f A noble gas. _____

g The metals _____ and _____

f Between v and vi, which is the most reactive? _____

Physical trends:

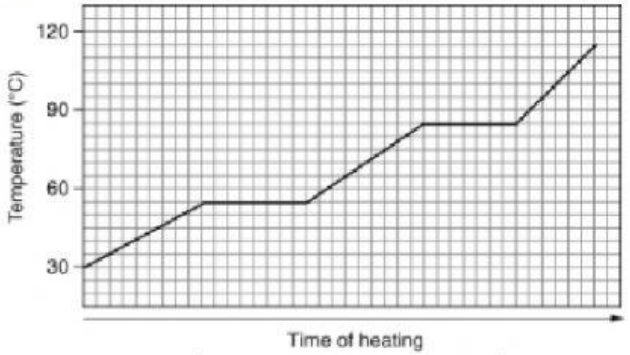
Property	Metal	Non-metal
High melting point		
Low melting point		
High boiling point		
Low boiling point		
Brittle		

LIVEWORKSHEETS

Property	Metal	Non-metal
Malleable		
Ductile		
Good conductor		
Insulator		
Shiny when polished		
On the left side of the periodic table		
On the right side of the periodic table		
Produces acidic oxides		
Produces alkaline oxides		

Use the suggested phrases to label the graph.

Temperature time graph



melting point	boiling point	liquid	solid	gas
energy being used to change state from solid to liquid	energy being used to change state from liquid to gas	energy being used to raise temperature of solid	energy being used to raise temperature of liquid	

Anomalous results:

The maximum rise in temperature obtained by each group in the class is shown in the table opposite. Group 5's result is anomalous.

a Calculate the mean maximum temperature rise

_____

_____

b Explain what you did with the anomalous result.

_____

_____

Group number	Maximum rise in temperature (°C)
1	8
2	7
3	8.5
4	6
5	48
6	7
7	7.5
8	8

LIVEWORKSHEETS