



ÉCOLE GLOBALE
INTERNATIONAL GIRLS' SCHOOL
Dehradun

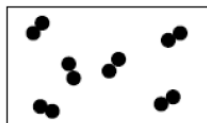
CLASS IGCSE CHEMISTRY

HOLIDAY ASSIGNMENT

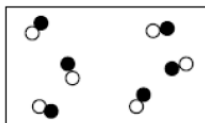
Student's Name:

Date :

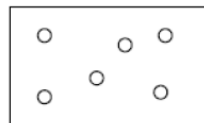
1. The boxes represent particles of different gases. One box shows the particles of elements in group 0 (group 8).



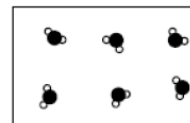
A



B



C



D

- (a) (i) What name is given to group 0 (8) elements?

.....

- (ii) Name two elements from group 0.

.....

- (b) (i) Which box best represents particles from group 0 elements?

.....

- (ii) Explain the reason for your answer.

.....

(c) A lighted splint is put into a gas jar of helium. What would happen?

.....

(d) Some properties of elements change as you go down their group in the periodic table. For each property listed below, comment on if and how it changes as you go down group 0.

(i) Reactivity

.....

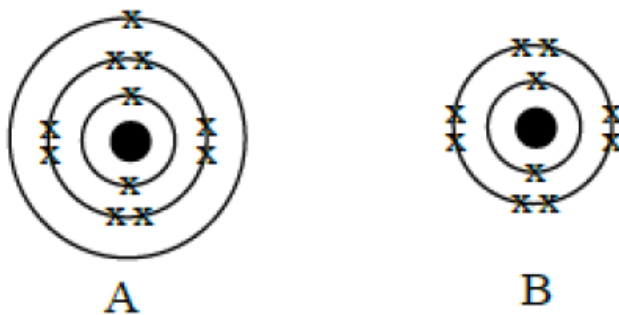
(ii) Density

.....

(iii) Metal or non-metal

.....

2. The diagram represents a sodium atom and a sodium ion.



(a) (i) Which diagram represents the sodium atom?

.....

(ii) Give reasons for your choice.

.....
.....

(iii) Sodium is in group 1 of the periodic table. How can you tell this from its electron structure?

.....
.....

(b) (i) What is an ion?

.....

(ii) Potassium is also in group 1 of the periodic table. What is the symbol for the potassium ion?

.....
.....

(c) Group 1 elements are stored in oil. Suggest the reason for this.

.....
.....

(d) A small piece of potassium is taken out of its bottle and cut. The surface is silver coloured and shiny, but after a few minutes it looked dull and white. A chemical reaction had taken place.

(i) With what had the potassium reacted?

.....

(ii) What is the name of the substance formed on the outside of potassium?

.....

(iii) Write a word equation for the reaction.

.....

(iv) Write a balanced symbol equation for this reaction.

.....

2. The boxes represent particles of different gases. One box shows the particles of elements in group 0 (group 8).

(e) (i) What name is given to group 0 (8) elements?

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(ii) Name two elements from group 0.

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(f) (i) Which box best represents particles from group 0 elements?

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(ii) Explain the reason for your answer.

.....
.....

(g) A lighted splint is put into a gas jar of helium. What would happen?

.....
.....

(h) Some properties of elements change as you go down their group in the periodic table. For each property listed below, comment on if and how it changes as you go down group 0.

(iv) Reactivity

.....
.....

(v) Density

.....
.....

(vi) Metal or non-metal

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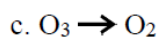
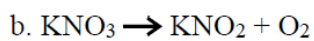
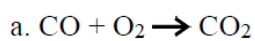
(iii) Write a word equation for the reaction.

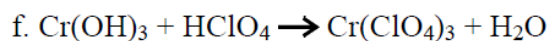
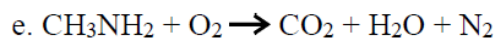
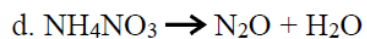
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(iv) Write a balanced symbol equation for this reaction.

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1. Balance the following chemical reactions:





2. Write the balanced chemical equations of each reaction:

a. Calcium carbide (CaC_2) reacts with water to form calcium hydroxide ($\text{Ca}(\text{OH})_2$) and acetylene gas (C_2H_2).

b. When potassium chlorate (KClO_3) is heated, it decomposes to form KCl and oxygen gas (O_2).

c. C_6H_6 combusts in air.

d. $C_5H_{12}O$ combusts in air.

3. Given the following reaction: $Na_2S_2O_3 + AgBr \rightarrow NaBr + Na_3[Ag(S_2O_3)_2]$

a. How many moles of $Na_2S_2O_3$ are needed to react completely with 42.7 g of $AgBr$?

b. What is the mass of $NaBr$ that will be produced from 42.7 g of $AgBr$?

4. From the reaction: $\text{B}_2\text{H}_6 + \text{O}_2 \rightarrow \text{HBO}_2 + \text{H}_2\text{O}$

a. What mass of O_2 will be needed to burn 36.1 g of B_2H_6 ?

b. How many moles of water are produced from 19.2 g of B_2H_6 ?