# Science

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## **Question 1:**

Why should a magnesium ribbon be cleaned before burning in air?

## **Answer 1:**

Magnesium is very reactive metal like (Na, Ca, etc.). When it expose to air it reacts with oxygen to form a layer magnesium oxide (MgO) on its surface.

 $\underbrace{Mg}_{Magnesium} + \underbrace{O_2}_{Oxigen} \longrightarrow \underbrace{2MgO}_{Magnesium \ Oxide}$ 

This layer of magnesium oxide is quite stable and prevents further reaction of magnesium with oxygen. The magnesium ribbon is cleaned by sand paper to remove this layer so that the underlying metal can be used for the reaction.

## **Question 2:**

Write the balanced equation for the following chemical reactions.

(i) Hydrogen + Chlorine  $\rightarrow$  Hydrogen chloride

(ii) Barium chloride + Aluminium sulphate  $\rightarrow$  Barium sulphate + Aluminium chloride

(iii) Sodium + Water  $\rightarrow$  Sodium hydroxide + Hydrogen

## Answer 2:

(i).  $\underbrace{H_2}_{Hydorgen} + \underbrace{Cl_2}_{Chlorine} \longrightarrow \underbrace{2HCl}_{Hydrogen Chloride}$ 

- (*ii*).  $\underbrace{3BaCl_2}_{Barium\ Chloride} + \underbrace{Al_2(SO_4)_3}_{Aluminium\ Sulphate} \longrightarrow \underbrace{3BaSO_4}_{Barium\ Sulphate} + \underbrace{2AlCl_3}_{Aluminium\ Chloride}$
- (*iii*).  $\underbrace{2Na}_{Sodium} + \underbrace{2H_2O}_{Water} \longrightarrow \underbrace{2NaOH}_{Sodium Hydroxide} + \underbrace{H_2}_{Hydorgen}$

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### **Question 3:**

Write a balanced chemical equation with state symbols for the following reactions.

(i) Solutions of barium chloride and sodium sulphate in water react to give insoluble barium sulphate and the solution of sodium chloride.

(ii) Sodium hydroxide solution (in water) reacts with hydrochloric acid solution (in water) to produce sodium chloride solution and water.

## **Answer 3:**

( <b>i</b> ).	$BaCl_{2(aq)}$	+	$Na_2SO_{4(aq)}$	$\longrightarrow$	$BaSO_{4(s)}$	+	$2NaCl_{(aq)}$
Ba	arium Chloride		Sodium Sulphate		Barium Sulphate	2	Sodium Chloride

( <i>ii</i> ).	$NaOH_{(aq)}$	+	$HCl_{(aq)}$	$\longrightarrow$	$NaCl_{(aq)}$	$+ H_2 O_{(l)}$
						نے
	Sodium Hydroxide		Hydrochloric Acid		Sodium Chloride	Water

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