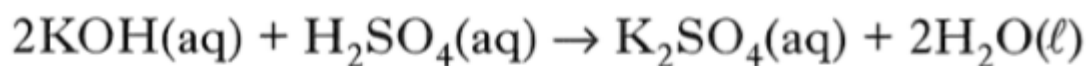


Topic 9 Homework Neutralisation Reactions

1. Which compound could neutralise nitric acid

- a) Sodium sulfate
- b) Sodium chloride
- c) Sodium nitrate
- d) Sodium oxide

2.



How many moles of potassium hydroxide are needed to neutralise 20 cm^3 of sulphuric acid, concentration 1 mol l^{-1} ?

- A 0.01
- B 0.02
- C 0.03
- D 0.04

3.



Which of the following are the spectator ions in this reaction?

- A Ag^+ and Cl^-
- B K^+ and NO_3^-
- C Ag^+ and NO_3^-
- D K^+ and Cl^-

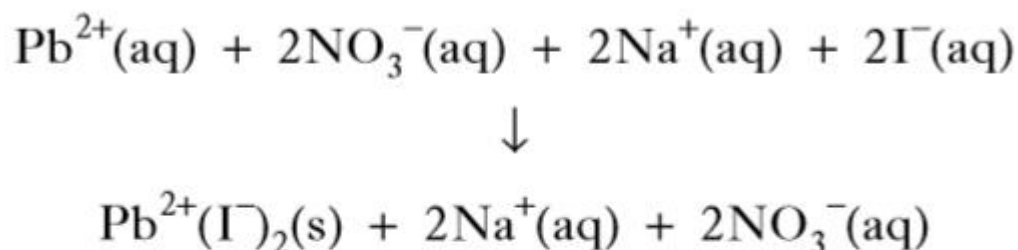
4.

Which compound would **not** neutralise hydrochloric acid?

- A Sodium carbonate
- B Sodium chloride
- C Sodium hydroxide
- D Sodium oxide

5.

The equation for the reaction between lead(II) nitrate and sodium iodide is:



The spectator ions present in this reaction are

- A $\text{Na}^{+}(\text{aq})$ and $\text{NO}_3^{-}(\text{aq})$
- B $\text{Na}^{+}(\text{aq})$ and $\text{I}^{-}(\text{aq})$
- C $\text{Pb}^{2+}(\text{aq})$ and $\text{NO}_3^{-}(\text{aq})$
- D $\text{Pb}^{2+}(\text{aq})$ and $\text{I}^{-}(\text{aq})$.

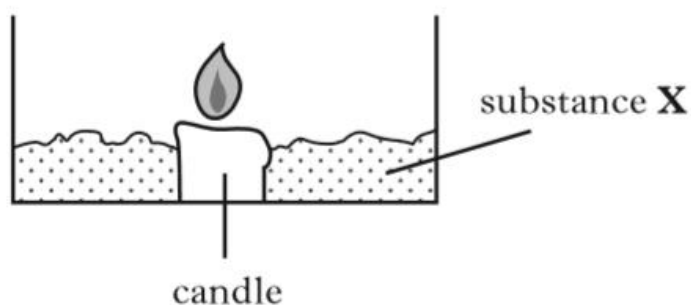
6.

In a neutralisation reaction between an acid and an alkali, the pH

- A of the acid increases
- B of the acid is unchanged
- C of the alkali increases
- D of the alkali is unchanged.

7.

When dilute hydrochloric acid is added to substance **X**, a gas is given off. This gas quickly puts out the candle flame.



Which of the following could be substance **X**?

- A Magnesium hydroxide
- B Magnesium carbonate
- C Magnesium oxide
- D Magnesium

8.

Which of the following oxides, when shaken with water, would give an alkaline solution?

- A Calcium oxide
- B Nickel oxide
- C Nitrogen dioxide
- D Sulphur dioxide

9.

Which of the following gases reacts with an alkaline solution?

- A Argon
- B Oxygen
- C Ammonia
- D Nitrogen dioxide

10.

Reactions can be represented using ionic equations. Which ionic equation shows a neutralisation reaction?

- A $2\text{H}_2\text{O}(\ell) + \text{O}_2(\text{g}) + 4\text{e}^- \longrightarrow 4\text{OH}^-(\text{aq})$
- B $\text{H}^+(\text{aq}) + \text{OH}^-(\text{aq}) \longrightarrow \text{H}_2\text{O}(\ell)$
- C $\text{SO}_2(\text{g}) + \text{H}_2\text{O}(\ell) \longrightarrow 2\text{H}^+(\text{aq}) + \text{SO}_3^{2-}(\text{aq})$
- D $\text{NH}_4^+(\text{s}) + \text{OH}^-(\text{s}) \longrightarrow \text{NH}_3(\text{g}) + \text{H}_2\text{O}(\ell)$