

# IGCSE Questions on Acids 1

1 Complete the following word equations: [3]

- (a) Sodium carbonate + nitric acid →
- (b) Zinc + sulfuric acid →
- (c) Copper + hydrochloric acid →

2 Complete the following equations: [4]

- (a) HCl + KOH →
- (b) H<sub>2</sub>SO<sub>4</sub> + CaCO<sub>3</sub> →
- (c) HNO<sub>3</sub> + Ca(OH)<sub>2</sub> →
- (d) NH<sub>3</sub> + H<sub>2</sub>SO<sub>4</sub> →

3 Name the following compounds: [4]

- (a) H<sub>2</sub>SO<sub>4</sub> .....
- (b) NH<sub>4</sub>Cl .....
- (c) HNO<sub>3</sub> .....
- (d) Na<sub>2</sub>CO<sub>3</sub> .....

4 A few drops of methyl orange indicator are put into a solution of pH=2. What colour will the indicator be? (put a x in the correct box) [1]

- A orange
- B red
- C yellow
- D colourless

5 Sodium oxide is a base. When it reacts with water an alkaline solution is formed. State the formula of the ion that makes the solution alkaline. [1]

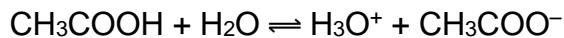
6 A teacher bubbled some hydrogen chloride gas into some water to make a solution of hydrochloric acid.

- (a) Draw a dot and cross diagram (showing outer shells only) to show the bonding in hydrogen chloride. [2]

- (b) State the formula of the particle that makes a solution of hydrochloric acid acidic. [1]

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- 7 CH<sub>3</sub>COOH (ethanoic acid) is an acid. When it is dissolved in water the following reaction occurs.



- (a) Name the particle lost by the CH<sub>3</sub>COOH molecule.

[1]

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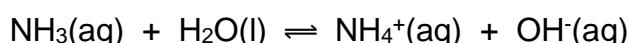
- (b) Explain why water can be described as a *base* in this reaction?

[1]

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- 8 Ammonia is a gas which dissolves in water to form ammonia solution. The reaction that occurs in ammonia solution is:



- (a) Explain in terms of the particles present why ammonia solution is an *alkali*.

[1]

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- (b) Explain whether water acts as an acid or a base in this reaction.

[2]

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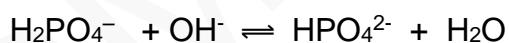
- (c) A student put a piece of damp red litmus paper into a gas jar containing ammonia gas. State one observation they could make.

[1]

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- 9 An ionic equation for the reaction between the dihydrogenphosphate ion and sodium hydroxide is:



- Explain whether the dihydrogenphosphate ion is acting as an acid or a base in this reaction.

[2]

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- 10 (a) Complete the word equations for the reactions of ethanoic acid.

[2]

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→ calcium ethanoate + hydrogen

mangesium oxide + ethanoic acid →

- (b) Write the symbol equation for the reaction between ethanoic acid and sodium hydroxide.

[2]

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