

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) $\text{HCl} + \text{KOH} \rightarrow$

(b) $\text{H}_2\text{SO}_4 + \text{CaCO}_3 \rightarrow$

(c) $\text{HNO}_3 + \text{Ca}(\text{OH})_2 \rightarrow$

(d) $\text{NH}_3 + \text{H}_2\text{SO}_4 \rightarrow$

3 Name the following compounds: [4]

(a) H_2SO_4

(b) NH_4Cl

(c) HNO_3

(d) Na_2CO_3

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 | <input type="checkbox"/> |
| B | red | <input type="checkbox"/> |
| C | yellow | <input type="checkbox"/> |
| D | colourless | <input type="checkbox"/> |

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]

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

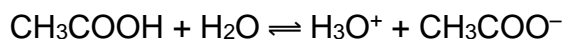
(a) Draw a dot and cross diagram (showing outer shells only) to show the bonding in hydrogen chloride. [2]

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

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7 CH₃COOH (ethanoic acid) is an acid. When it is dissolved in water the following reaction occurs.



(a) Name the particle lost by the CH₃COOH molecule. [1]

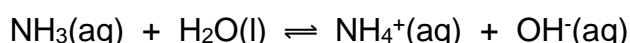
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(b) Explain why water can be described as a *base* in this reaction? [1]

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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]

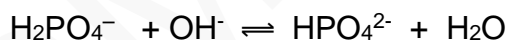
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(c) A student put a piece of damp red litmus paper into a gas jar containing ammonia gas. State one observation they could make. [1]

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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]

→ calcium ethanoate + hydrogen

magnesium oxide + ethanoic acid →

(b) Write the symbol equation for the reaction between ethanoic acid and sodium hydroxide. [2]

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