

7.4 NEUTRALISATION

QUESTION 1

Which of the following happens during neutralisation?

I An acid loses its acidity.

II An alkali gains its alkalinity.

III The product is a neutral solution.

IV A salt and water are the only product of neutralisation

A I and II only

B II and IV only

C I, II and III only

D I, III and IV only

QUESTION 2

Which of the following bases reacts with hydrochloric acid to form sodium chloride and water?

- A Copper oxide
- B Sodium carbonate
- C Sodium hydroxide
- D Calcium hydroxide

QUESTION 3

Ant bites are acidic in nature. What would you use to treat ant bites?

- A Vinegar
- B Orange juice
- C Lime juice
- D Baking powder

QUESTION 4

Why is a base such as aluminium hydroxide used as a component of toothpaste?

- A It helps to whiten teeth.
- B It helps to strengthen teeth.
- C It kills the bacteria in the mouth.
- D It prevents tooth decay by neutralise the acids produced by bacteria in the mouth

QUESTION 5

We know that the end point of the titration has been reached when the

- A indicator changes colour
- B conductivity of the solution in the conical flask increases
- C conductivity of the solution in the conical flask decreases
- D when half the volume of the solution in the burette has been added to the solution in the conical flask

QUESTION 6

31.25 cm³ of hydrochloric acid of unknown concentration is needed to exactly neutralise 25.0 cm³ of 0.1 mol dm⁻³ sodium hydroxide solution. Calculate the concentration of the hydrochloric acid, in mol dm⁻³.

A 0.08

B 0.81

C 0.18

D 0.85

QUESTION 7

Calculate the number of moles of water that is produced when 25 cm³ of 1 mol dm⁻³ of sodium hydroxide is exactly neutralised by sulphuric acid.

- A 0.025 mol
- B 0.25 mol
- C 0.05 mol
- D 0.5 mol

QUESTION 8

**25 cm³ of hydrochloric acid exactly neutralise
20 cm³ of 0.5 mol dm⁻³ sodium hydroxide.**

**Calculate the concentration, in mol dm⁻³, of the
hydrochloric acid used.**

A 0.2

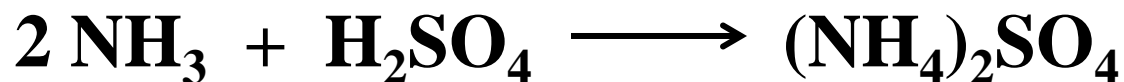
B 0.4

C 0.6

D 0.8

QUESTION 9

Sulphuric acid reacts with ammonia solution according to the equation



Find the concentration of the sulphuric acid if 20 cm³ of the acid is used to exactly neutralise 25 cm³ of 1 mol dm⁻³ ammonia solution.

A 0.125 mol dm⁻³

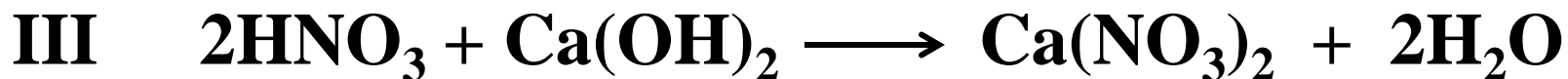
B 0.225 mol dm⁻³

C 0.625 mol dm⁻³

D 1.25 mol dm⁻³

QUESTION 10

Which of the following equations represents a neutralisation reaction?



A I and II only

C I, II and III only

B II and IV only

D I, III and IV only

QUESTION 11

A few drops of sodium hydroxide is added to a solution of sodium chloride. The pH of the resulting solution is most probably.

- A 3
- B 5
- C 7
- D 12

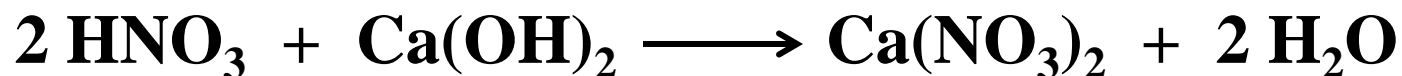
QUESTION 12

20 cm³ of 2.0 mol dm⁻³ acid *X* is required to exactly neutralise 20 cm³ of 0.4 mol dm⁻³ sodium hydroxide solution. Acid *X* is most probably

- A nitric acid
- B sulphuric acid
- C hydrochloric acid
- D methanoic acid

QUESTION 13

The equation for the reaction between nitric acid and calcium hydroxide is



In an acid-base titration, 0.2 mol dm^{-3} nitric acid is added slowly into 25 cm^3 of 0.1 mol dm^{-3} calcium hydroxide solution. The initial reading of the burette is 10.0 cm^3 , find the final reading of the burette at the end of the titration.

- A 15 cm^3
B 20 cm^3

- C 35 cm^3
D 50 cm^3

QUESTION 14

A student diluted 15 cm³ of 0.2 mol dm⁻³ sodium hydroxide solution in a conical flask with 10 cm³ of distilled water before carrying out an acid-base titration with 0.5 mol dm⁻³ hydrochloric acid. Find the total volume of the solution in the conical flask at the end point of the titration.

A 6 cm³

B 15 cm³

C 25 cm³

D 31 cm³

QUESTION 15

Which of the following pairs of substances are reactants in a neutralisation reaction?

| | | |
|---|-------------------|-------------------|
| A | Copper sulphate | Hydrochloric acid |
| B | Nitric acid | Sulphuric acid |
| C | Copper (II) oxide | Sodium hydroxide |
| D | Ammonia solution | Hydrochloric acid |

ANSWERS

| | | | | | |
|---|---|----|---|----|---|
| 1 | D | 6 | A | 11 | D |
| 2 | C | 7 | A | 12 | B |
| 3 | D | 8 | B | 13 | C |
| 4 | D | 9 | C | 14 | D |
| 5 | A | 10 | C | 15 | D |