

# 7.1 ACIDS AND BASES

# QUESTION 1

**Why is hydrogen chloride, HCl, considered as an acid?**

- A. It contains hydrogen.
- B. It contains hydrogen ions.
- C. It ionises in water to produce hydrogen ions.
- D. It ionises in water to produce hydroxide ions.

# QUESTION 2

**Which of the following is a diprotic acid?**

A. HCl

B.  $\text{H}_2\text{SO}_4$

C.  $\text{NH}_3$

D.  $\text{CH}_3\text{COOH}$

## QUESTION 3

Which of the following is a monoprotic acid?

I HCl

II NH<sub>3</sub>

III H<sub>2</sub>SO<sub>4</sub>

IV CH<sub>3</sub>COOH

A. I and II only

B. I and IV only

C. II and III only

D. III and IV only

# QUESTION 4

**A base is a chemical substance that**

- A. contains hydroxide ions
- B. contains hydrogen ions
- C. ionises in water to produce hydroxonium ions
- D. can neutralise an acid to produce salt and water

# QUESTION 5

**Why is ammonia considered as an alkali?**

- A. It contains hydroxide ions.
- B. It ionises in water to produce salt and water.
- C. It ionises in water to produce hydroxonium ions.
- D. It ionises in water to produce free mobile hydroxide ions.

# QUESTION 6

**Which of the following is true?**

**I All alkalis are bases**

**II All bases are alkalis**

**III Alkalis are bases that are soluble in water**

**IV An alkali ionises in water to produce free mobile hydroxide ions.**

A. I and II only

B. II and III only

C. I, II and III only

D. I, III and IV only

# QUESTION 7

**Which of the following acids is used to coagulate latex?**

- A. Carbonic acid
- B. Ethanoic acid
- C. Methanoic acid
- D. Hydrochloric acid

# QUESTION 8

**Which of the following exhibits alkaline properties?**

- A. Dry ammonia gas
- B. Solid sodium hydroxide
- C. Solid potassium hydroxide
- D. Potassium hydroxide solution

## QUESTION 9

**Which of the following turns dry blue litmus paper red?**

- A. Glacial ethanoic acid
- B. Hydrogen chloride solution
- C. Ethanoic acid in dry propanone
- D. Hydrogen chloride in dry methylbenzene

# QUESTION 10

**Which of the following contains free mobile hydroxide ions?**

- A. Dry ammonia gas
- B. Dilute sulphuric acid
- C. Dry barium hydroxide
- D. Sodium hydroxide solution

# QUESTION 11

**When hydrogen chloride gas dissolves in water, the solution that is formed contains**

- A. electrons
- B. hydrogen ions
- C. chlorine atoms
- D. hydrogen atoms

## QUESTION 12

**An acid reacts with a base to produce**

- A. a salt only
- B. water only
- C. a salt and water only
- D. a salt, water and carbon dioxide gas

# QUESTION 13

**Which of the following substances neutralises an acid to produce salt and water only?**

**I Sodium hydroxide**

**II Copper oxide**

**III Magnesium oxide**

**IV Calcium carbonate**

**A. I and II only**

**B. II and IV only**

**C. I, II and III only**

**D. I, III and IV only**

## QUESTION 14

**An acid produces a salt, water and carbon dioxide gas when it reacts with**

- A. a metal
- B. an alkali
- C. a metal oxide
- D. a metal carbonate

# QUESTION 15

**Which of the following tests can be used to investigate the properties of acids?**

**I Heating with copper oxide**

**II Test with magnesium ribbon**

**III Test with sodium carbonate**

**IV Test with red litmus paper**

**A. I and II only**

**B. II and IV only**

**C. I, II and III only**

**D. I, III and IV only**

# ANSWERS

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