Acids and Bases (beginner level)

1 What could be the pH of a dilute solution of a weak acid?

A 1
B 4
C 7
D 10

2 Which substance has the lowest pH in solution?

A Ammonia
B Ethanoic acid
C Sulfuric acid
D Sodium hydroxide

3 Which one of the elements can burn in air to form a substance that can dissolves in water to give pH 2?

A Sulfur
B Calcium
C Hydrogen
D Aluminium

4 The oxide of a metal was found to react with dilute nitric acid and sodium hydroxide. Which one of the following best describe the oxide?

A Acidic
B Basic
C Atmospheric
D Neutral

5 Which one of the following burns in excess oxygen to form a neutral oxide?

A Hydrogen
B Sulfur
C Carbon
D Nitrogen

6 Which one is true of all dilute acids?

A They can react with any metals.
B They can turn red litmus blue.
C They can react with ammonium salts to give ammonia gas.
D They react with any bases.

7 Which one of the following is the best option used to neutralise excess acid in soil for farming?

A Ammonium chloride
B Calcium hydroxide
C Potassium hydroxide
D Sodium chloride

8 What is the best method to differentiate aqueous sodium chloride and dilute hydrochloric acid?

A Add calcium carbonate.
B Add moist red litmus paper.
C Add aqueous sodium hydroxide
D Add aqueous ammonium nitrate

9 Which compound can react with carbon dioxide?

A Calcium sulfate
B Calcium chloride
C Calcium nitrate
D Calcium hydroxide

10 The table below gives information about three indicators.

Indicator	colour changes	pH at which colour change takes place
A	Red to yellow	5
B	Colourless to pink	10
C	Yellow to blue	6

What are the colours of these indicators in pure water?

	A	B	C
A	Yellow	Blue	Colourless
B	Blue	Pink	Colourless
C	Yellow	Colourless	Blue
D	Colourless	Pink	Yellow

11 Four aqueous solutions have the pH values shown in the table.

Solution	A	B	C	D
pH	3	5	9	14

If two solutions are mixed, which pair must give an alkaline mixture?

A C and D
B A and C
C A and D
D B and C

12 Which substance can be used in excess to change pH in soil from 3 to 7?

A Sodium hydroxide
B Calcium carbonate
C Calcium chloride
D Nitric acid

13 Dilute nitric acid can react with both sodium oxide and sodium carbonate. In which way are these two reactions alike?

A Gas is formed.
B Hydrogen is formed.
C Carbon dioxide is formed.
D Water is formed.

14 Which statement is true about ammonium salts?

A They can react with acid to produce ammonia gas.
B They can react with carbonate to produce carbon dioxide gas.
C They can react with alkali to produce ammonia gas.
D They can react with metal to produce hydrogen gas.

15 Oxides of elements may be classified. Which option shows the correct classification?

	Acidic	Basic	Amphoteric
A	Carbon monoxide	Zinc oxide	Aluminium oxide
B	Sodium oxide	Carbon dioxide	Calcium oxide
C	Zinc oxide	Sulfur dioxide	Sodium oxide
D	Nitrogen dioxide	Calcium oxide	Zinc oxide

16 Which one of the following oxides has no reaction with dilute nitric acid?

A Carbon monoxide
B Carbon dioxide
C Sulfur dioxide
D Potassium oxide

17 Which one of the following statement is a property of hydrogen chloride gas?

A It is a conductor of electricity.
B It can turn dry blue litmus paper red.
C It can form a solution in water that has pH lesser than 7.
D It has high melting point.

18 Which statement is true about bases?

A They are all soluble in water.
B The soluble bases can form hydroxide ions in water.

C Bases and alkalis are all oxides.
D All metal oxides are basic oxides.

19 Which compound gives the highest pH in solution?

A Potassium hydroxide
B Sodium nitrate
C Nitric acid
D Ethanoic acid

20 Which property is not typical property of an acid?

A It burns in air.
B It reacts with magnesium.
C It reacts with copper (II) oxide.
D It conducts electricity in water.

Answers:

1. B	2. C	3. A	4. C	5. A	6. D	7. B	8. A	9. D	10. C
11. A	12. B	13. D	14. C	15. D	16. A	17. C	18. B	19. A	20. A