Part 1: Basic Concepts

1. What is the name of the chemical reaction when an acid and an alkali react to cancel each other out?

- A) Combustion
- B) Neutralisation
- C) Evaporation
- D) Oxidation

2. Fill in the Blank: Neutralisation is a _____ change (Physical/Chemical) because new substances like salt and water are created.

3. When Universal Indicator is added to a neutral solution, it turns the color _____.

4. If an excess amount of acid is added to a small amount of alkali, the final solution will be:

- A) Acidic
- B) Alkaline
- C) Neutral
- D) Purple

5. Complete the word equation for the reaction between Hydrochloric Acid and Sodium Hydroxide:

Hydrochloric Acid + Sodium Hydroxide —-> _____ + _____

6. Which of the following best defines "Neutralisation"?

- A) Making a liquid turn bright red.
- B) Adding water to an acid to make it weaker.
- C) A reaction between an acid and a base to form a salt and water.
- D) Boiling an alkali until it disappears.

7. Match the pH values to their correct description:

- **pH 1:** _____
- **pH 7:** _____
- **pH 13:** _____
  (Options: Neutral, Strong Acid, Strong Alkali)

8. Fill in the Blank: A solution with a pH of 6 is considered to be weakly _____.

Part 2: Neutralisation in Everyday Life

9. The stomach produces Hydrochloric Acid primarily to:

- A) Turn food into water.
- B) Kill bacteria and help enzymes break down food.
- C) Keep the body's temperature high.
- D) Neutralise the saliva.

10. Medicines used to treat indigestion by neutralising stomach acid are called _____.

11. Antacids stop stomach pain because they contain _____ substances that react with excess acid.

- A) Sugary
- B) Acidic
- C) Alkaline
- D) Salty

12. Bacteria in the mouth convert sugar from food into _____, which dissolves tooth enamel.

13. Toothpaste is formulated to be _____ (Acidic/Alkaline) so that it can neutralise the acids produced by mouth bacteria.

14. Which gases are primarily responsible for causing "Acid Rain"?

- A) Oxygen and Nitrogen
- B) Sulfur Dioxide and Nitrogen Oxides
- C) Carbon Dioxide and Helium
- D) Hydrogen and Neon

15. To fix the pH of a lake affected by acid rain, environmentalists often add _____ to the water.

16. Farmers spread "lime" (calcium hydroxide) on fields because many crops cannot grow well if the soil is too _____.

17. Why is "lime" used to treat soil instead of just plain water?

- A) Water is too expensive for farmers.
- B) Water only dilutes the acid, while lime actually reacts to neutralise it.
- C) Lime makes the soil change color so farmers can see it.
- D) Water makes the soil too alkaline.

18. Fill in the Blank: Rinsing with a baking soda solution works as a temporary toothpaste substitute because baking soda is a weak _____.

Part 3: Scientific Equipment & Practical Skills

19. Why is it important to swirl or shake the flask while adding acid from a burette?

- A) To speed up the evaporation of the liquid.
- B) To ensure the acid and alkali are fully mixed for an accurate reaction.
- C) To keep the glass from getting too hot.
- D) To change the pH faster.

20. When working with strong acids (pH 1), a student should wear _____ and _____ for safety.

21. Fill in the Blank: The purpose of adding **Universal Indicator** to the flask is to provide a _____ change so we know when the neutralisation point is reached.