



## CLASS NOTES-ANSWERS

1) State the differences between acids and bases.

Answer:

Acids	Bases
Acids are sour in taste.	Bases are bitter in taste.
Acids turn blue litmus paper into red colour.	Bases does not change the colour of blue litmus paper.
Acids does not change the colour of the red litmus paper.	Bases turn red litmus paper to blue colour.
Acids do not change the colour of turmeric.	Bases turn turmeric to red.

2) Ammonia is found in many household products, such as window cleaners. It turns red litmus blue. What is its nature?

Answer: Ammonia is basic in nature.

3) Name the source from which litmus solution is obtained. What is the use of this solution?

Answer: Litmus solution is extracted from lichens. Litmus solution is used as an indicator to find acidic and basic nature of a solution.

4) Is the distilled water acidic/basic/neutral? How would you verify it?

Answer: Distilled water is neutral in nature, and this can be tested by using red and blue litmus paper. In either of the cases, colour remains unchanged.

5) Describe the process of neutralisation with the help of an example.

Answer: Neutralisation is a reaction between an acid and a base. In this reaction, both acids and bases cancel each other's effect and result in the formation of salt and water. For example, when sodium hydroxide (NaOH) is added to hydrochloric acid (HCl), sodium chloride (NaCl) and water (H<sub>2</sub>O) are obtained.



6) Mark 'T' if the statement is true and 'F' if it is false:

- a) Nitric acid turns red litmus blue. F
- b) Sodium hydroxide turns blue litmus red. F
- c) Sodium hydroxide and hydrochloric acid neutralize each other and form salt and water. T
- d) Indicator is a substance which shows different colours in acidic and basic solutions. T
- e) Tooth decay is caused by the presence of a base. F

7) Dorji has a few bottles of soft drink in his restaurant. But, unfortunately, these are not labelled. He has to serve the drinks on the demand of customers. One customer wants acidic drink, another wants basic and third one wants neutral drink. How will Dorji decide which drink is to be served to whom?

**Answer:** Dorji can taste a few drops out of soft drink bottles, the acidic solution is sour in taste, the basic solution is bitter in taste and the neutral solution has no taste. Along with tasting, Dorji can use litmus paper to test the nature of soft drink. He should use blue litmus paper to test the acidic solution. Dorji must put a drop of solution on blue litmus. If it turns red, then the solution will be in nature. Similarly, he can use red litmus paper to test the basic solution. He must put a drop of solution on red litmus. If it turns blue, then the solution will be basic in nature. The drink which would not affect both red and blue litmus would be neutral.

8) Explain why:

- a) An antacid tablet is taken when you suffer from acidity.

**Answer:** The antacid tablet contains base-like milk of magnesia which neutralises the acid produced in the stomach. Hence, it is used while suffering from acidity.

- b) Calamine solution is applied on the skin when an ant bites.

**Answer:** When an ant bites, it injects formic acid inside the skin. Calamine consists of Zinc carbonate, which is basic in nature. Hence calamine neutralises



formic acid's effect to relieve the affected person.

- c) Factory waste is neutralised before disposing it into the water bodies.

**Answer:** Factory wastes are acidic in nature, which may cause harm to the aquatic life. Hence, they are neutralised by using a base before disposing it into the water bodies.

- 9) Three liquids are given to you. One is hydrochloric acid, another is sodium hydroxide and third is a sugar solution. How will you identify them? You have only turmeric indicator.

**Answer:**

- 1) We will put a drop each of hydrochloric acid, sodium hydroxide and sugar solution on the turmeric indicator. The liquid which changes the colour of the turmeric indicator to red is basic in nature, that is, sodium hydroxide.
- 2) Now, we will put a drop of sodium hydroxide on a drop of each of the other two liquids separately. After that, we will put the drops of these mixtures on the turmeric indicator.

The drop which will change the colour of the turmeric indicator to red contains sugar solution. This is because the mixture of basic and neutral solutions are basic in nature.

On the other hand, the drop which will not change the colour of turmeric indicator contains hydrochloric acid. This is because hydrochloric acid reacts with sodium hydroxide to form a neutral solution.

- 10) Blue litmus paper is dipped in a solution. It remains blue. What is the nature of the solution? Explain.

**Answer:** The solution may be neutral or basic in nature as both of them will not change the colour of the blue litmus paper.

- 11) Consider the following statements:

- a) Both acids and bases change colour of all indicators.



- b) If an indicator gives a colour change with an acid, it does not give a change with a base.
- c) If an indicator changes colour with a base, it does not change colour with an acid.
- d) Change of colour in an acid and a base depends on the type of the Indicator.
- e) Which of these statements are correct?
- i) All four
  - ii) a and d
  - iii) b,c and d
  - iv)  only d

