



SHIKSHA CLASSES

Sub. : Science

Answer Paper

Marks : 20

Std. : VIIIth - S.B.

12. Introduction to Acid and Base

Q.1(A) : Choose the correct alternative

2

1) The colour of phenolphthalein indicator in alkaline solution is

Ans : d) pink

2) is sour to taste.

Ans : a) An acid

Q.1(B) : Solve any one of the following question

1

1) State the following statement is true or false.

Salts are neutral.

Ans : True

2) Find the odd one out

HCl, CH₃COOH, H₂SO₄, HNO₃

Ans : CH₃COOH

3) State three vegetables from which natural indicators can be prepared.

Ans : Red cabbage , Radish , Tomato

Q.2(A) : Give reason (Any One)

2

1) When we have stomachache doctors prescribe medicine containing magnesium hydroxide.

Ans : i) There is hydrochloric acid in our stomach which helps in the digestion of food.

ii) Sometimes in the stomach, there is more hydrochloric acid than we need.

iii) This excess acid causes acidity and indigestion resulting in stomachache.

iv) When magnesium hydroxide is administered it neutralizes the extra acid in the stomach.

Therefore, magnesium hydroxide is the best cure for stomachache.

So, when we have stomachache, doctors prescribe medicine containing magnesium hydroxide.

2) Tarnished and stained copper vessels are brought to a shine by using tamarind pulp.

Ans : In due course, unused copper vessels are covered with a coating of black copper oxide and other compounds of copper which tarnish the vessel. Tamarind contains tartaric acid. When the vessel is rubbed with tamarind pulp, tartaric acid reacts with copper oxide and removes the layer. Thus, the copper vessel regains its shine.

Q.2(B): Solve any two of the following question.

4

1) Sulphuric acid has highest importance in chemical Industry. Why?

Ans : Sulphuric acid has highest importance in the chemical industry because it is used in the manufacturing of fertilizers like ammonium sulphate and superphosphate of lime. It is used in the manufacturing of hydrochloric acid, nitric acid, phosphoric acid, ether, plastics and metal sulphates. It is also used in the manufacturing of dyes, drugs, perfumes, disinfectants and glue.

2) The label on the bottle of chemical is spoiled. How will you find whether the chemical is acidic or not?

Ans : The chemical is tested with blue litmus paper. If it turns red it is an acidic otherwise tested with red litmus paper, if it turns blue, it is an alkaline.

3) Which are the industrial uses of acids?

Ans : **Acids which are used in the industry are:**

1) Sulphuric acid

2) Hydrochloric acid

3) Nitric acid

1) **Sulphuric acid:** Sulphuric acid is used (a) in the manufacture of chemical fertilizers like ammonium sulphate, (b) for cleaning gold and silver articles and (c) in car batteries.

2) **Hydrochloric acid:** Hydrochloric acid is used (a) to clean toilets and (b) to obtain glucose from starch and also for producing gelatine.

3) **Nitric acid:** Nitric acid is used (a) in the manufacture of perfumes (b) for engraving on copper, brass or silver and (c) in the manufacture of paints and explosives.

4) Match the following:

Ans :

Column 'A'	Column 'B'
1. Strong acid	d. Nitric acid
2. Weak alkali	a. Magnesium hydroxide
3. Weak acid	b. Carbonic acid
4. Strong alkali	c. NaOH

Q.3 : Solve any two of the following question.

6

1) Taste the colour change for each of the following solutions with red litmus, blue litmus, phenolphthalein and methyl orange solutions.

1) Sulphuric acid (H_2SO_4) 2) Calcium hydroxide [$Ca(OH)_2$] 3) Sodium hydroxide (NaOH)

Ans :

Solutions	Red litmus	Blue litmus	Phenolphthalein	Methyl Orange
1. Sulphuric acid (H_2SO_4)	No change	Turns red	Colourless	Orange
2. Calcium hydroxide [$Ca(OH)_2$]	Turns blue	No change	Turns pink	Yellow
3. Sodium hydroxide (NaOH)	Turns blue	No change	Turns pink	Yellow

2) Name the acid present in (1) Orange (2) Vinegar (3) Tamarind (4) Curd (5) Tomato (6) Lemon.

Ans :

Substance	Acid
Orange	Citric acid
Vinegar	Acetic acid
Tamarind	Tartaric acid
Curd	Lactic acid
Tomato	Oxalic acid
Lemon	Citric acid

3) Write the chemical names from given formulae:

H_2SO_4 , $Ca(OH)_2$, HCl , $NaOH$, KOH , NH_4OH

Ans :

- 1) H_2SO_4 – Sulphuric acid
- 2) $Ca(OH)_2$ – Calcium hydroxide
- 3) HCl – Hydrochloric acid
- 4) $NaOH$ – Sodium hydroxide
- 5) KOH – Potassium hydroxide
- 6) NH_4OH – Ammonium hydroxide

4) Write the difference between acid and alkali.

Ans :

Acid	Alkali
1. Acid has sour taste.	1. Alkali has bitter taste.
2. Acid turns blue litmus red.	2. Alkali turns red litmus blue.
3. An acid in an aqueous solution gives H^+ ions.	3. An alkali in an aqueous solution gives OH^- ions.
4. Oxides of non – metals form acids.	4. Oxides of metals form bases.

Q.4 : Solve any One of the following question.

5

1) Identify the following solutions, whether they are acid or alkali

Ans :

Solution	Change in Indicator		Acid/Alkali
	Litmus	Phenolphthalein	Methyl orange
1. Blue litmus turns red	No change	Orange colour turns red	Acid
2. Blue litmus turns red	No change	Orange colour turns red	Acid
3. Red litmus turns blue	Colourless to pink	Orange colour turns yellow	Alkali

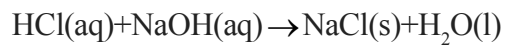
2) Explain the neutralization with example. Write reaction also.

Ans : **Neutralization reaction:** Neutralization is a type of chemical reaction in which an acid reacts with a base to form salt and water.

Example:

1. Reaction between hydrochloric acid (HCl) and sodium hydroxide(NaOH)

Hydrochloric acid reacts with sodium hydroxide to produce their salt sodium chloride(NaCl) and water.



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