KALPAVRUKSHA MODEL SCHOOL

Online class Assignments

Class: X **Sub: Chemistry** **Date: 19.07.2021**

Topic: Acids, Bases and Salts

I. Answers for the following questions:

1. Define a) pH scale b) Universal indicator

Ans: a) pH scale: It is used to express the acidic, basic or neutral nature of an aqueous solution is called pH scale.

b) Universal indicator: It is a mixture of organic dyes or several indicators.

2. Write a short note on importance of pH in everyday life.

Ans:

Biological importance: Biochemical reactions occur at a definite pH values. Our body works within a pH range of 7.0 to 7.8. Living organisms survive only in a narrow range of pH change. Also when pH of rain water becomes less than 5.6, it is called acid rain.

Agriculture: Plants require a specific pH range for their healthy growth. pH values of different types of soils is determined for increasing agricultural production.

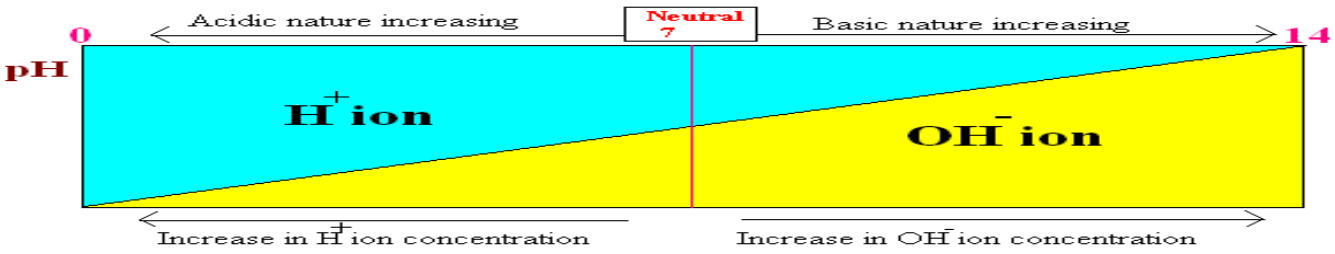
Medicines: pH values of urine and blood are determined for the diagnosis of various diseases. Our stomach produces hydrochloric acid which helps in digestion of food, but if during indigestion, stomach produces too much acid, it causes pain and irritation, it can be controlled by taking milk of magnesia.

Dairies: In diaries we determine the pH value of milk and it is adjusted to about 6.6. If the pH of the milk is less than 6.6, it indicates that milk has turned sour.

Tooth decay: Tooth decay starts when pH of the mouth is lower than 5.5. This is because the excess acid reacts with Calcium phosphate of tooth enamel and causes its corrosion. Bacteria present in the mouth produce acids by degradation of sugar and food particles remain in the mouth after eating. In order to prevent this clean your mouth after eating food and use basic tooth pastes to neutralize the excess acids present in the mouth.

3. Neatly draw variation of pH with change in concentration of H^+ and OH^- ions.

Ans:



4. Write the pH value of following solutions in a table:

Ans:

NaOH	→	14
NH_3	→	11.6
Milk of magnesia	→	10.5
Blood	→	7.3 to 7.5
Saliva	→	6.5 to 7.5
Urine	→	5.5 to 7.5
Coffee	→	4.5 to 5.5

Beer	→	4.0 to 5.0
Tomato juice	→	4.0 to 4.4
Wine	→	2.8 to 3.8
Vinegar	→	2.4 to 3.4
Lemon juice	→	2.2 to 2.4
Gastric juice	→	1.0 to 3.0
Battery acid	→	0.5
HCl	→	0