Importance of pH in Everyday Life

i) Plants and animals

Living organisms survive only in a narrow range of pH change. Our body works within a pH range of 7.0 to 7.8. When pH of rain water is less than 5.6, it is called acid rain. When acid rain flows into the rivers, it lowers the pH of the river water. The survival of aquatic life in such rivers become difficult.

ii) pH of soil

The ideal soil pH for the growth of plants should be close to 7 i.e it should neither be very acidic nor very alkaline.

iii) pH in our digestive system

Our stomach produces hydrochloric acid. It helps in digestion of food without harming the stomach.

During indigestion the stomach produces too much acid and this causes pain and irritation.

Antacids are used to neutralise the acid and get rid of pain. Eg: Magnesium hydroxide (milk of magnesia), baking soda solution

iv) Tooth decay

Tooth enamel, made up of calcium phosphate is the hardest substance in the body. It does not dissolve in water, but is corroded when the pH in the mouth is below 5.5.

Bacteria present in the mouth produce acids by degradation of sugar and food particles remaining in mouth after eating.

Using toothpaste, which are generally basic for cleansing the teeth can neutralise the excess acid and prevent tooth decay.

V) Self defence by animals and plants through chemical warfare

Honey bee string and nettle leave sting releases methanoic acid and cause burning pain. Use of a mild base like baking soda on the stung area gives relief.

Nettle is a herbaceous plant which grows in the wild. A traditional remedy to get releif from sting of nettle leave is rubbing the area with the leaf of dock plant, which often grows beside the nettle in the wild. Dock plant has basic nature.

The atmosphere of Venus is made up of thick white and yellowish clouds of sulphuric acid. Hence life is not possible there.

Some naturally occuring acids.

Natural source	Acid
Vinegar	Acetic acid
Orange	Citric acid
Tamarid	Tartaric acid
Tomato	oxalic acid
Curd	Lactic acid
Lemon	Citric acid
Ant string	Methanoic acid
Nettle sting	Methanoic acid