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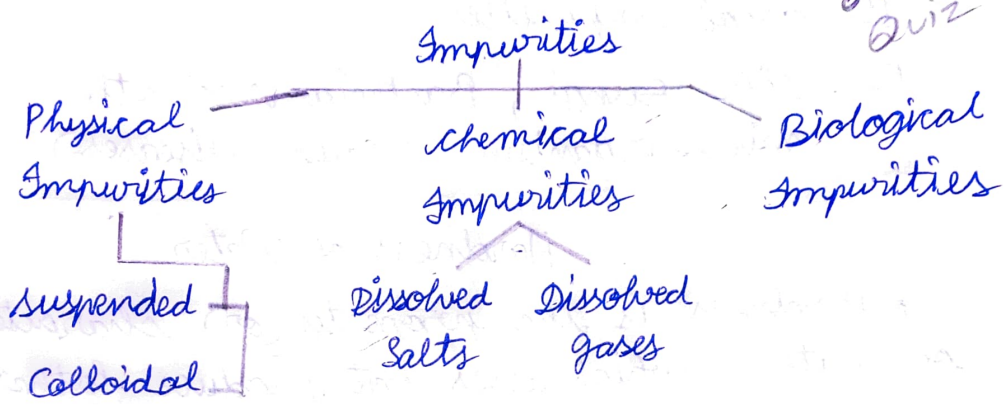
Engineering Chemistry

UNIT - I

Water and Its treatment

* Types of impurities in water

8 mark
Quiz



⇒ Physical impurities

A : Suspended impurities

E.g: Like sand, oil droplets, vegetable and animal matter, impart turbidity to water

B : Colloidal impurities

E.g: Like finely divided silica, clay and organic waste products impart colour, odour and taste to water

⇒ chemical impurities

A : Dissolved salts

Eg: Like bi-carbonate, sulphate and chlorides of calcium and Magnesium (Mg) and carbonates, bicarbonates of sodium (Na) and potassium (K)

Dissolved Mg and Ca salts in H_2O causes hardness

B: Dissolved gases

Eg: Like O_2 , CO_2 , H_2S , SO_2 make the water acidic

⇒ Biological impurities

Eg: Like Fungi, Bacteria and other micro-organism. (causes diseases)

2 mark

Hardness of water

* Hardness is the property (or) characteristics of water, which does not produce lather with soap.

⇒ Types of hardness

i) Temporary / Carbonate / alkaline

ii) Permanent / Non-Carbonate / Non-alkaline

* Temporary hardness - This is due to the presence of Bi-carbonates of Calcium and Mg.

i) It is removed by boiling the water.

ii) Adding lime to the water. (Removal process of hardness)

* Permanent hardness - This is due to the presence of chlorides and sulphates of Ca and Mg.

i) It can be removed by lime soda process

ii) Zeolites process / Permutit