

UNIT-1

WATER AND ITS TREATMENT

Short Answer Question

1. Define Hardness of water. What are the types of Hardness of water?
2. What is Degree of Hardness and mention the units used for expressing the hardness of water
3. Write any two Merits and Demerits of ion exchange process.
4. What are Boiler Troubles?
5. Why is the presence of even a small amount of silica dangerous to the boilers?
6. Why is the calgon method better than other internal treatment methods?
7. What is Reverse Osmosis?
8. What is Chlorination?
9. Write any Four Disadvantages of hardness of water.
10. What happens when temporary hard water is boiled

Long answer questions:

1. Estimate the amount of Hardness of Water by Complexometric Method .
2. Identify the hardness causing salts and calculate the total, temporary and permanent hardness:
 $\text{Mg}(\text{HCO}_3)_2$ -7.3mg/L , $\text{Ca}(\text{HCO}_3)_2$ -16.2mg/L , MgCl_2 -9.5 mg/L, CaSO_4 -13.6mg/L
3. What are Boiler Troubles and explain Causes and prevention methods of Scales, Sludges and Caustic Embrittlement.
4. What is meant by defluoridation. Explain the process of Nalgonda technique.
5. What is meant by desalination of water? Explain Reverse Osmosis method.
6. Why Ion Exchange process is called as Demineralization Process. Explain in process in detail with regeneration.
7. Explain about Internal Treatment of water
8. Define Potable Water and write the specifications and steps involved in the Treatment of Potable Water
9. Explain Break Point of Chlorination
10. 1 g of CaCO_3 dissolved in HCl is made upto 1 litre. 100ml of a solution required 28 ml EDTA 100ml of hard water sample required 33ml of EDTA. 100ml of the sample water, after boiling, cooling and filtering requires 10ml of EDTA for titration. Calculate total, permanent and temporary hardness of water.