

Syllabus:

Theory syllabus:

1. Introduction to water quality
Importance of water, sources of water – composition and characteristics of natural water- characteristics imparted by impurities in water- effect of temperature, equilibria in water systems.
2. Water quality characteristics
Physical, chemical and biological characteristics of water – standard methods of determination of important physical and chemical parameters of water quality.
Eg: PH, turbidity, electrical conductivity, total solids, alkalinity, hardness etc.
Units of measurements and expression of results, Bacteriological indicators, and determination of coliforms.
3. Water quality representation and standards.

Practical syllabus:

1. Water sampling methods.
2. Physical characteristics and measurements – odour, colour, temperature etc.
3. Determination of hardness of water
4. Determination of alkalinity of water.
5. Determination of acidity of water
6. Determination of dissolved oxygen in water
7. Determination of PH of water.

Water quality Analysis Exam

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28/3/22

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2A: COD: * COD is defined as the amount of oxygen required by the organic matter in a sample of water for its oxidation by a strong chemical oxidising agent such as $K_2Cr_2O_7$.

* The method of measurement with a strong chemical oxidising all organic matter such as potassium.

3A: BOD: Measuring the amount of oxygen consumed by a sample of known volume. The water sample is 1st diluted with air saturated distilled water to ensure an excess of oxygen.

The concentration of dissolved oxygen in the dilute sample is immediately determined.

4A: Hardness of water: It is the property of not giving lather with soap. It arises due to some dissolved salts of the calcium & magnesium. pure water is colourless, odourless and tasteless and gives good lather with soap. This is referred to as soft water. Hardness is not necessary a pollution parameter but the removal of hardness is necessary in order to prevent some chemical reactions of the salts in the water with soap & corrosion of metal.

5A

Turbidity of water

Materials that causes water to be turbid include clay, silt, very tiny inorganic and organic matter, dissolved coloured organic compounds, planktons and other microscopic organisms.

Turbidity makes water cloudy or opaque to scattering of light by the suspended particles.

6A

Pathogens present in water

Water is potential carrier of various diseases causing agents, namely pathogenic micro organisms. They cause danger to health and life of human beings and animals. The pathogens spread through water and include water born diseases like cholera, typhoid, dysentery, hepatitis etc.