

an International CBSE Finger Print School Coimbatore

LESSON – 20

WASTE WATER MANAGEMENT

I. Word Focus

1. Sewage
2. Sewer
3. Sewerage
4. Contamination
5. Scum
6. Sludge
7. Activated sludge
8. Aeration
9. Clarifier

II. Answer the following

Q1. What are the pollutants present in city sewage?

Ans. Sewage contains organic and inorganic matter in suspended and soluble forms, proteins fats and various inorganic suspended waste, sugar, fatty acids, alcohols, amino acids and inorganic ions constitutes the soluble forms. It also contains medicinal wastes and disease-causing bacteria. The major component of sewage is running water.

Q2. We should plant eucalyptus trees along the sewage pond. Why?

Ans. Eucalyptus trees absorb all surplus wastewater rapidly and release pure water vapour into the atmosphere.

Q3. What is the function of bar screens in wastewater treatment plant?

Ans. They are involved in mechanical separation and do not allow the large sized wastes to pass through them.

Q4. What is sludge? How is it disposed?

Ans. Semi-solids such as faeces that settle down during wastewater treatment are called sludge. This sludge is removed using a skimmer and then is transferred to a tank where it is decomposed by anaerobic bacteria to produce biogas. This biogas is used as a low-cost fuel for heating, cooking, etc. It is also used to produce electricity.

III. Answer in detail

1. Describe various steps of cleaning wastewater in a wastewater treatment plant.

Ans: The steps performed for cleaning the wastewater before it is released into the water bodies is known as wastewater treatment plant.

The steps are-

- i. A bar screen is placed through which the wastewater is passed to eradicate impurities from it like sticks, rags, cans, plastic packets, etc.
- ii. After that, a grit is added after the bar screen, through which the filtered water is passed for additional filtering of sand, grit, and stones.
- iii. Now, the water is passed to a large tank which is sloped towards the middle and impurities like faeces settle down and later are removed with a scraper. Sludge is the by-product of the wastewater treatment process.
- iv. The sludge is further treated in a bio-gas plant for the production of bio-gas. The sludge has oils and fats remaining in it which are removed by skimmer.
- v. The treated product is known as clear water, which is treated for the growth of aerobic bacteria by pumping air in it. The air consumes soap, human waste and any unwanted matter. It is kept undisturbed for several hours for the microbes to settle down at the bottom of the tank as activated sludge. The water is removed from the top.
- vi. The water is then disinfected with chlorine or UV rays.
- vii. The completely treated water is discharged into a sea or river or into the ground.

