

1. State various uses of water.

Sol. Water is used for:

- Drinking
- Cooking
- Washing clothes, utensils
- Generating electricity
- Bathing
- Habitat for various organisms etc.
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2. What is wastewater?

Sol. The dirty water which contains various impurities like dust, polythene bags, Vegetable peels, kitchen waste, oil & water that goes down the drains from sinks, showers, toilets, laundries, etc is wastewater. Wastewater cannot be used further.

3. What are the various causes of water pollution?

Sol. Water is polluted by various factors like:

- Bathing of cattle in river bodies.
- Washing of clothes & utensils by people in rivers.
- Discharging wastes from factories, industries in nearby river bodies & ponds.

4. When is World Water Day celebrated?

Sol. World Water Day is celebrated on 22nd March.

5. What is sewage?

Sol. The wastewater that is being generated at homes, industries, agricultural activities,

human activities etc are called sewage.

6. What do you mean by “sewage treatment”?

Sol. Sewage treatment is a process of removing pollutants before it enters a water body or is Refused

7. Explain why is it harmful to discharge untreated sewage into water bodies?

Sol. It is harmful to discharge the untreated sewage into the water bodies as it contains harmful substances. Most of it is water which has dissolved & suspended impurities which may pollute the water bodies & also harm the aquatic plants & animals.

8. What is sludge? How is it treated?

Sol. Solid fecal matter which is generated after the water treatment plant is known as sludge. The sludge is transferred to a separate tank where it is decomposed by anaerobic bacteria. The biogas produced can be used as fuel & the dried sludge is used as manure for replenishing the nutrients of the soil.

9. Untreated human excreta are a health hazard. Justify the statement.

Sol. Untreated human excreta is a health hazard as it may cause water pollution. It pollutes both Surface water as well as groundwater. Since groundwater is a source of water for wells, tube wells, etc therefore it leads to waterborne diseases like cholera, jaundice, typhoid, etc.

10. Name any two chemicals that are used to disinfect water.

Sol. Chlorine & Ozone.

11. What do you understand by the term “sewerage”?

Sol. Sewerage is like a transport system that carries sewage from the point where it is being generated to the point of disposal i.e. treatment plant.

12. List five ways to control sewage generation.

Sol. Ways to control sewage generation are:

- Leakage in sewer lines should be checked & repaired regularly.
- Do not defecate, spit or scatter litter in public places.
- Used tea leaves, solid food remains, toys, towels, etc should not be thrown in the water pipe because these materials may choke the pipe.

13. Suggest an alternative arrangement for sewage disposal.

Sol. To improve sanitation, low-cost onsite sanitation sewage disposals are being made. For example septic tanks, composting pits, etc

14. Why bacteria are used in sewage treatment plants?

Sol. The bacteria decompose the suspended waste that includes domestic wastes & other undesirable organic substances present in the clarified water.

The activity of bacteria produces decomposed organic material from which solid waste is separated. This solid waste is used as manure.

15. Discuss the various steps involved in the water treatment plant.

Sol. There are various steps involved in the water treatment plant which involves physical, chemical & biological processes:

- Wastewater is passed through bar screens to remove big objects like cans, sticks, rags, etc.

- The liquid material is then passed through a sedimentation tank where solid waste like fecal matter, sand, grit settles down.
- This solid matter is then removed with the help of a scrapper. This is the sludge.
- A skimmer removes the floatable solids like oil, grease, etc.
- The clear water so obtained is called clarified water.

- Air is pumped into clarified water to help aerobic bacteria to grow. The bacteria then consume the unwanted matter still present in clarified water.
- The suspended microbes settle at the bottom & the water is removed from the top.

16. What are the harmful effects of sewerage?

Sol. Accumulation of sewerage leads to:

- a) spread of various diseases.
- b) Water pollution.
- c) Discharge of sewerage in water bodies leads to excessive growth of algae.

17. What is the function of bar screens in a waste water treatment plant?

Sol. The bar screen removes large objects like rags, sticks, cans, plastic packets, etc. from the sewage.

18. What is a manhole? Why are manholes made?

Sol. A manhole is a covered vertical hole in the ground, pavement, or road above the underground sewer pipeline. If there is any leakage or blockage in the underground sewer pipeline, the sanitary worker can go down, up to these sewer pipelines for cleaning or any repair.

19. Why should not chemicals be released in the drain?

Sol. Chemicals like paints, solvents, insecticides should not be thrown down the drain as it may kill the useful microbes that help to decompose the waste present in the sewage & purify water.

20. Why should not tea leaves, solid food remains, etc not be released in the drains?

Sol. Used tea leaves, solid food remains, etc should not be thrown down the drain as they may choke the drain.