Class 7 Chapter 18 – Wastewater Story Important Questions with Answers

Very Short Answer Type Questions

Q-1: _____, _____ and _____ are the inorganic impurities present in the sewage.
Answer: Nitrates, phosphates, metals

Q-2: _____ is a bacteria causing typhoid fever.
Answer: Salmonella paratyphi

Q-3: What is the purpose of the sewerage?
Answer: The sewerage is made up of a network of sewers that are both large and tiny. It functions similarly to a transportation system that moves sewage from the source of production to the treatment plant or site of disposal.

Q-4: How is dried sludge used?
Answer: Dried sludge is used as manure, returning organic matter and nutrients to the soil.

Q-5: What proportion of activated sludge is made up of water?
Answer: The activated sludge is about 97% water.

Q-6: Which trees quickly absorb all extra wastewater and release clean water vapour into the air?
Answer: Eucalyptus trees quickly absorb all extra wastewater and release clean water vapour into the air.

Q-7: What was the aim of the “Swachh Bharat” mission initiated by the Government of India?
Answer: The Government of India launched the Swachh Bharat Mission (SBM), Swachh Bharat Abhiyan, or Clean India Mission, in 2014 as a national initiative to end open defecation and enhance solid waste management.

Q-8: Give examples of some waterborne diseases.
Answer: Typhoid, Cholera, Dysentery etc.

Q-9: Name two chemicals used to disinfect water.
Answer: Chlorine and ozone are the two chemicals used to disinfect water.

Q-10: State the use of biogas produced in wastewater treatment.

Answer: The biogas produced in wastewater treatment can be used as fuel or to produce electricity.

Q-11: What kind of contaminants are present in wastewater?
Answer: Physical, chemical and biological matter are the contaminants present in the wastewater.

Q-12: What might occur if we pour cooking fats and oils down the drain?
Answer: The pipes may become clogged as they solidify. Fats block the soil's pores in an open drain, making it less effective in filtering water.

Q-13: List the two low-cost onsite sewage disposal systems.
Answer: Septic tanks, compositing pits

Q-14: Where are septic tanks appropriate?
Answer: Septic tanks are suitable for places where there is no sewerage system, for hospitals, isolated buildings or a cluster of 4 to 5 houses.

Q-15: Name the two byproducts of wastewater treatment.
Answer: The two byproducts of wastewater treatment are sludge and biogas.

Short Answer Type Questions

Q-1: Explain the following terms:
a) Sewage
b) Cleaning of Water

Answer:
a) Sewage: Sewage is wastewater that is discharged by residences, businesses, medical facilities, and other users. It also contains rainwater that has rained heavily or run down the street during a storm. Waste that is liquid is sewage.

b) Cleaning of Water: Cleaning of water is a process of removing pollutants before it enters a water body or is reused.

Q-2: What action did the UN General Assembly take in response to the growing freshwater shortage?
Answer: Freshwater is becoming increasingly scarce as a result of population increase, pollution, industrialisation, poor management, and other issues. The United Nations General Assembly declared the years 2005 to 2015 the International Decade for Action on "Water for Life" on March 22, 2005, World Water Day, realising the gravity of the problem. The goal of all initiatives taken during this decade is to cut the number of people without access to clean drinking water in half.

Q-3: Discuss vermi-processing toilets. State the beneficial product made from such toilets.

Answer: The human waste is processed by earthworms in a pit in the vermi-processing toilet. The organic material in human excreta is slowly consumed by the earthworms, who then break it and expel it from their bodies as warm casting, also called vermi cakes.

A vermi-processing toilet produces vermi cakes, which are essentially high-quality manure(a resource much needed for soil), as a valuable byproduct.

Q-4: How does activated sludge develop?
Answer: The water is moved to an aeration tank for further processing after it has been cleared. By adding air to the cleaned water with an aerator, aerobic bacteria can thrive. These aerobic bacteria then consume whatever organic material is left in the cleaned water, including soaps, food waste, human waste, and so on. After several hours, the suspended aerobic bacteria become activated sludge and sink to the bottom of the tank.

Q-5: What is the role of bar screens in wastewater treatment?
Answer: Bar screens are used to filter out wastewater. It helps in the removal of large materials like rags, sticks, cans, plastic packs, and napkins.

Q-6: What do you mean by clarified water? What is it good for?
Answer: Water that has undergone bar screening, sedimentation, aeration, and skimming is known as clarified water. It can be used to clean public spaces, flush toilets, and water plants.

Q-7: Describe how you play a part in the sanitation of your community.
Answer: Every citizen has a responsibility to keep public spaces clean. The actions listed below should be taken in order for us to participate fully.

- Make sure that everything around us is maintained clean.
- The home's sewage system needs to be properly maintained.
- In the event that sewage lines burst, immediately notify the appropriate authority.

Q-8: What function do sand and grit removal tanks serve?
Answer: Heavy particles like grit and sand might settle in the progressively sloping grit and sand removal tank. This tank's water flow has been significantly slowed. When water flows at a nearly stationary rate, heavy wastewater particles like grit and sand sink to the bottom of the tank. The water is then taken to the clarifier.

Q-9: Sewage, sewers, and sewerage all have mutual connections. Can you elaborate on how?
Answer: Sewage is a mixture of wastewater that exits homes and other buildings. Sewers are sewage-carrying pipes, and sewerage is a network of those pipes. In this way, sewage, sewers, and sewerage all have mutual connections.

Q-10: Write one word for the following.
a) The settling solids that are removed by the scrapper during the treatment of wastewater.
b) A drain system which is a breeding place for flies and mosquitoes.
c) A liquid waste that causes water and soil pollution.
d) A liquid treated in a sewage treatment plant.
e) A microbe which causes dysentery.

Answer:
a) Sludge
b) Open
c) Sewage
d) Wastewater
e) Protozones

Long Answer Type Questions

Q-1: Suggest some of the better housekeeping practices that can be adopted to minimise the drain blockage.
Answer: Examining what you are flushing down the drain is one method to reduce or eliminate waste and pollutants at the source. Below are the suggestions for the same:

- Fats and cooking oil shouldn't be flushed down the drain. The pipes may become clogged as they solidify. Throwing oil and fats in the trash will prevent them from clogging open drains and diminishing the soil's capacity to filter water.

- Paints, solvents, pesticides, motor oil, and pharmaceuticals all include chemicals that can kill the bacteria that assist filter water. So don't flush them down the drain.

- Always dispose off used tea leaves, solid food scraps, soft toys, cotton, sanitary towels, and other waste in the trash can because these materials clog the drains. They prevent oxygen from flowing freely. The degrading process is hampered as a result.

Q-2: List various steps involved in wastewater treatment.
Answer: Chemical, physical, and biological processes are used in the treatment of wastewater to remove the physical, biological, and chemical matter that contaminates the wastewater in some way.

1. Wastewater is passed through bar screens. Large objects like sticks, rags, cans, plastic packets, and napkins are removed.
2. After that, water enters a tank to remove grit and sand. Incoming wastewater's pace is slowed down to allow grit, sand, and stones to settle.

3. Then, the water is allowed to settle in a sizable tank with a sloped centre. Solids, such as faeces, sink to the bottom and are scraped away. This is the sludge. Grease and other floatable materials are removed by a skimmer. Water so cleared is called clarified water.
4. The sludge is then moved to a different tank, where anaerobic microorganisms break it down.
5. To encourage the growth of aerobic bacteria, air is pumped into the purified water. Bacteria eat soaps, food scraps, human waste, and other undesired substances that are still present in cleared water.
6. The suspended microorganisms eventually become activated sludge and settle to the tank bottom after several hours. The water is subsequently removed from the surface using sand drying beds or machines.
7. The amount of organic matter and suspended materials in the treated water is extremely low. It is released into the air, the ground, or a body of water. Nature further purifies it.

Q-3: Diseases are caused by poor sanitation. Justify.
Answer: Sanitation refers to the upkeep of hygiene at the communal level. Maintaining public cleanliness and efficient sewage disposal is required. Sanitation problems mean that hygiene standards are not being upheld. Inappropriate sewage disposal leads to this. This enables the reproduction of pathogenic bacteria and their vectors. The probability of developing several diseases rises as the quantity of dangerous bacteria rises. Both the quantity and accessibility of clean drinking water are impacted by poor sanitation. Lack of access to clean drinking water causes a number of health problems that can develop into a number of diseases. In addition, it would be challenging to recover from diseases due to a lack of clean water.

Multiple Choice Type Questions

Q-1: Which of the following is not an organic impurity found in sewage?
a) Pesticides
b) Herbicides
c) Phosphates
d) Animal waste

Answer: c) Phosphates
Explanation: Phosphates are the inorganic impurities found in sewage.

Q-2: Which of the following is the point of origin for trade waste?
a) Kitchen
b) Toilets
c) Commercial organisations
d) All of the above
Answer: c) Commercial organisations

Q-3: Why is air pushed into the water that has been clarified?
a) To help bacteria to evade.
b) To help aerobic bacteria to grow.
c) To promote the further cleaning of water.
d) None of the above

Answer: b) To help aerobic bacteria to grow.