Chemistry Worksheet Class 7 on Chapter 18 Wastewater Story with Answers - Set 2

Q1. Chemical used to treat wastewater is/are-

a.) Chlorine
b.) Ozone
c.) Ammonia
d.) None of the above

Correct Answer– (a.) Chlorine, (b.) Ozone

Q2. Chlorination is which step in the wastewater treatment plant?

a.) First
b.) Second
c.) Second last
d.) Last

Correct Answer– (d.) Last

Q3. Which of the following is a characteristic of wastewater?

a.) Foul smell
b.) Dark colour
c.) Bad taste
d.) All of the above

Correct Answer– (d.) All of the above

Q4. Which of the following is a part of the inorganic impurities of the sewage?

a.) Excreta
b.) Garbage
c.) Phosphate
d.) Vegetable waste

Correct Answer– (c.) Phosphate

Q5. Which of the following is not a water-borne disease?

a.) Cholera
b.) Typhoid
c.) Tuberculosis
d.) Diarrhea

Correct Answer– (c.) Tuberculosis

Q6. Fill in the blanks.
a.) Nitrates and phosphates are ___ impurities.
b.) The last step of wastewater treatment is ___.
c.) Aerobic bacteria feed on organic matter and produce ___.

Answer.
a.) Nitrates and phosphates are organic impurities.
b.) The last step of wastewater treatment is chlorination.
c.) Aerobic bacteria feed on organic matter and produce biogas.

Q7. State True or False.
a.) Open drains are the breeding spot for mosquitoes and other microbes.
b.) Sludge is the solid impurities settled at the bottom of the clarifier.
c.) Sewage water can be reused.

Answer.
a.) Open drains are the breeding spot for mosquitoes and other microbes – True
b.) Sludge is the solid impurities settled at the bottom of the clarifier – True
c.) Sewage water can be reused – False

Q8. Name the type of microbes present in sewage that causes diseases.

Answer. Cholera is caused by consuming food or water contaminated with the bacterium Vibrio cholera. Diarrhoea is usually caused by a virus, but it can also be caused by contaminated food. Vibrio microbes found in sewage cause diseases like cholera and typhoid.

Q9. Define sewage.

Answer. Sewage is wastewater that is discharged from homes, hospitals, industries, offices, and other locations. It also includes rainwater that falls on the streets during a storm. Many harmful substances are present in the water that runs off the roads and rooftops. Sewage is a type of liquid waste. Wastewater contains both dissolved and suspended impurities. These impurities are referred to as contaminants.

Q10. Justify why the open drain is a big concern nowadays.

Answer. Open drains are a major concern because-

- They create unsanitary conditions.
- It encourages flies, mosquitoes, and other insects to breed and spread a variety of diseases.

Q11. What do you understand about wastewater treatment?

Answer. Sewage is a liquid waste containing most water (along with various impurities). Wastewater treatment or water cleaning refers to the process of removing impurities from wastewater or sewage before they can be reused or discharged into bodies of water.

Q12. What is the importance of microbes in sewage?

Answer. Microbes in sewage water help in the digestion of organic matter, thereby aerobically purifying the water. Anaerobic microbes enable the digestion of sludge to produce useful manures.

Q13. Why is chlorine passed into the wastewater treatment plant?

Answer. The process of adding chlorine or chlorine compounds to water, such as sodium hypochlorite, is known as chlorination. This method is used in water to kill bacteria, viruses, and other microbes. Chlorination is particularly useful in preventing the spread of waterborne diseases such as cholera, dysentery, and typhoid.

Q14. What are some of the alternatives for sewage disposal?

Answer. In the absence of a sewerage system, onsite sewage disposal can be arranged.

- Septic tanks, for example, are constructed to collect human excreta. Human excreta eventually decompose and decompose into compost.
- Composting pits can be built to collect waste and turn it into manure. Sewage can be collected and processed in biogas plants to generate useful biogas.
- Chemical toilets are relatively new discoveries. They use little water to dispose of human waste and are environmentally friendly. These toilets are ideal for trains.

Q15. What is the composition of sewage?

Answer. The sewage consists of the following impurities:

Type of impurities	Examples
Organic impurities	Human faeces, animal waste, oil, urea (urine), pesticides, herbicides, fruits and vegetables.
Inorganic impurities	Nitrates, phosphates, metals.

Nutrients	Phosphorus, nitrogen.
Bacteria	Various types, such as those causing cholera, typhoid, etc.
Other microbes	Various types, such as those causing diarrhea, jaundice, etc.

Q16. Explain why it is harmful to discharge untreated sewage into rivers or seas.

Answer. Sewage is a complex mixture of suspended solids, organic and inorganic impurities, nutrients, pathogenic and saprotrophic bacteria, and other microbes.
Discharging untreated sewage into rivers or seas will pollute the water resources.
Water pollution is hazardous to aquatic plants and animals. It also spreads diseases such as cholera, typhoid, polio, meningitis, malaria, and dengue.

Q17. Describe various housekeeping practices for efficient working of the sewage system.

Answer. Some of the housekeeping practices for efficient working of the sewage system are as follows:

- Cooking fats and oils should not be discarded. They have the potential to harden and clog the pipes. Fats clog the soil pores in an open drain, reducing their effectiveness in filtering water. Oil and fats should be discarded.
- Paints, solvents, insecticides, motor oil, and medicines can all kill microbes that help purify water. So don't flush them down the toilet.
- Tea leaves, solid food remains, soft toys, cotton, sanitary towels, and other items should also be discarded. These wastes clog the sewers. They prevent the free flow of oxygen. This slows down the degradation process.

Q18. Explain the relationship between sanitation and disease.

Answer. A large number of diseases are caused by poor sanitation and contaminated drinking water. A large portion of our population still lacks access to sewerage due to which they defecate in the open, on dry riverbeds, on railway tracks, near fields, and, in some cases, directly in water. Human excreta that has not been treated poses a health risk. It has the potential to pollute both water and soil. Pollution affects both surface and groundwater. Wells, tube wells, springs, and many rivers get their water from groundwater. As a result, it becomes the most common path for water-borne diseases. Cholera, typhoid, polio, meningitis, hepatitis, and dysentery are among them.

Q19. What do you understand by the term chemical toilet?

Answer. A chemical toilet has a reservoir that is chemically treated and is located directly beneath the toilet seat. The chemicals reduce the odour or foul odour emitted by human waste and perform partial disinfection of the waste. Since chemical toilets have a limited capacity for storing human waste, their reservoirs must be emptied into a sewer line after a certain amount of time. Chemical toilets are used in

all portable toilets. They can be moved from one location to another. Chemical toilets are used on construction sites and at large outdoor gatherings such as concerts, festivals, and weddings.

Q20. Describe the steps involved in getting clarified water from wastewater.

Answer. The steps are as follows:

- Wastewater is filtered through bar screens to remove large objects such as rags, sticks, cans, plastic packets, napkins, and so on.
- The water is then passed through the Grit and Sand removal tank, where sand, grit, and pebbles are settled.
- Water is then allowed to settle in a tank, where solids such as faeces (referred to as sludge) settle at the bottom and are scraped away with a scraper. Skimmers remove floatable solids such as oil and grease. Clarified water is water that has been thoroughly cleaned. Sludge is used to generate biogas.
- The clarified water is then passed through an aerator tank, introducing air into the water. It promotes the growth of aerobic bacteria, which decompose organic matter such as human waste.
- After a few hours, the suspended microbes settle to the tank's bottom as activated sludge. The top layer of water is then removed. Manure is made from dried activated sludge.
- Water is drawn from the top and collected in a tank. The treated water contains very little organic material and suspended matter. It is dumped into the sea, a river, or the ground. It is sometimes disinfected with chemicals such as chlorine and ozone before being distributed to towns.