

## Wastewater Treatment Plant (WWTP)

### A. Choose the correct answer:

1. What is the primary purpose of a Wastewater Treatment Plant (WWTP)?
  - A) To generate drinking water
  - B) To clean wastewater before releasing it back into the environment
  - C) To produce electricity
  - D) To store rainwater
2. Which process is used to remove large solid waste from wastewater in the initial stage?
  - A) Filtration
  - B) Sedimentation
  - C) Screening
  - D) Aeration
3. What is the role of bacteria in biological treatment of wastewater?
  - A) To add oxygen to water
  - B) To break down organic matter
  - C) To remove solid waste
  - D) To increase water hardness

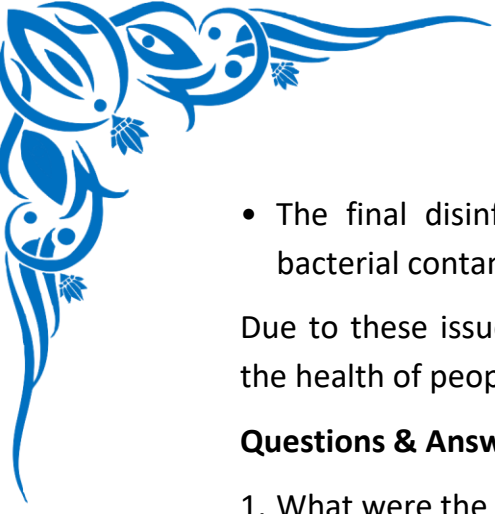
### B. Fill in the Blanks:

1. Wastewater treatment is essential to prevent \_\_\_\_\_ pollution.
2. The process of adding air to wastewater to promote bacterial growth is called \_\_\_\_\_.
3. In a wastewater treatment plant, harmful bacteria are killed using \_\_\_\_\_ or ultraviolet (UV) treatment.

### C. Case Study:

A city's wastewater treatment plant faced an issue where untreated sewage was being released into a nearby river. An environmental scientist, Dr. Arjun, conducted an investigation and found that:

- The primary treatment unit was not functioning properly, allowing large solid waste to pass through.
- The aeration tanks in the secondary treatment process had insufficient oxygen supply, slowing down bacterial activity.



- The final disinfection stage had a low chlorine concentration, resulting in bacterial contamination in the discharged water.

Due to these issues, the river water became polluted, affecting aquatic life and the health of people living nearby.

#### **Questions & Answers:**

1. What were the key problems in the wastewater treatment plant?
2. How does insufficient aeration affect the biological treatment process?
3. Why is the disinfection stage important in wastewater treatment?
4. What steps can be taken to improve the efficiency of the treatment plant?

#### **D. Short Answer Questions:**

1. Why is it necessary to treat wastewater before releasing it into the environment?
2. What are the three main stages of wastewater treatment?
3. How do wastewater treatment plants help in water conservation?

#### **E. Long Answer Questions:**

1. Explain the different stages of wastewater treatment and their importance.
2. Discuss how untreated wastewater affects human health and the environment.
3. Describe the role of microorganisms in wastewater treatment and how they contribute to the purification process.