

## Water Management Chemistry Questions with Solutions

**Q1:** The value of coefficient of discharge in comparison to coefficient of velocity is found to be \_\_\_\_\_?

- A. Lesser
- B. More
- C. Equal
- D. Zero

**Answer:** A. Lesser

**Q2:** The force with which the distinct bodies held together when their surfaces are brought in contact to each other is called \_\_\_\_\_?

- A. Adhesion
- B. Cohesion
- C. Surface tension
- D. All are correct

**Answer:** A. Adhesion

**Q3:** The level above or below the sea level which is also called zero level or datum is called \_\_\_\_\_?

- A. Soil level
- B. Positive level
- C. Reduce level
- D. Negative level

**Answer:** C. Reduce level

**Q4:** Compressibility of a liquid is defined as vertical or contraction in volume with variation of pressure. Therefore water is considered as \_\_\_\_\_?

- A. Expandable
- B. In-Compressible
- C. Compressible
- D. All are correct

**Answer:** B. In-Compressible

**Q5:** An area is officially declared as drought affected if the mean Annual rainfall is less than of the annual Potential evaporation, \_\_\_\_\_?

- A. 70%
- B. 75%

- C. 80%
- D. 85%

**Answer:** D. 85%

**Q6:** Specific gravity of a liquid is defined as the ratio of its specific weight to that of pure water and standard temperature and pressure. Therefore specific gravity is equal to \_\_\_\_\_.

- A. 1.0
- B. 1.2
- C. 1.5
- D. 2.0

**Answer:** A. 1.0

**Q7:** Mention the types of Water Management.

**Answer:**

Traditional water resource management involves controlling water storage and flow. To improve water security in the face of increased demand, water scarcity, growing unpredictability, larger extremes, and fragmentation difficulties, users will need to invest in institutional reinforcement, information management, and (natural and man-made) infrastructure development.

Resource management, uncertain decision making, system analysis, and hydro-meteorological forecasting and warning all require information systems. In addition to discovering alternatives for improved water storage, including aquifer regeneration and recovery, advanced technological investments to improve efficiency, conserve and protect energy, recycle storm water and wastewater, and establish non-conventional water sources should be considered.

**Q8:** A large number of fish are suddenly found floating dead on a lake. There is no evidence of toxic dumping but you find an abundance of phytoplankton. Suggest a reason for the fish kill.

**Answer:**

Excess phytoplankton (organic pollutants like leaves, grass debris, and other organic pollutants) in water is biodegradable. Bacteria in water decomposes these organic materials. When a significant number of bacteria degrade this organic stuff, the dissolved oxygen in the water is consumed. Fish cannot survive when the dissolved oxygen level goes below 6 ppm.

**Q9:** Mention the different Water Conservation and Management methods.

**Answer:**

The different methods of water conservation are as follows:

- **Groundwater Harvesting:** It is a method of storing water beneath the ground in order to manage the flow of groundwater in an aquifer and increase the water table.
- **Rainwater Harvesting:** It is the process of collecting and storing rainwater instead of letting it flow off. Rainwater is collected on the roof and sent to a tank, reservoir, cistern, or natural tanks, among other places.
- **Drip Irrigation:** It's a method of irrigation that saves water and fertiliser by slowly dripping water to the roots of various crops, either on the soil surface or directly into the root zone, via a network of pipes, tubes, and valves. When compared to typical irrigation, this method saves more water.
- **Dams:** Dams are simple hydraulic constructs that operate as a barrier between flowing water's source and its destination. In the past, these dams were modest and hand-built, but today, new engineering techniques and technologies are employed to build massive dams.
- **Water-saving habits:** Water conservation can be accomplished through a variety of practises. Take shorter showers instead of long baths, use less water while washing clothes, and mend leaking taps.

**Q10:** What is a Greywater system?

**Answer:**

Greywater is the waste water from non-toilet plumbing systems such as showers and baths, washing machines, and hand basins. Greywater is easier to recycle and clean than black water since it contains less toxins. In a large water system, the size of the system is determined by the standard and method of treatment.

To minimise confusion with the mains drinking water, the Greywater system's pipes and supply points must be clearly labelled.

**Q11:** What is Water Stress?

**Answer:**

Water stress arises when demand for water exceeds available supply for a period of time or when poor quality limits its use. Fresh water resources deteriorate in quantity (aquifer over-exploitation, dry rivers, etc.) and quality as a result of water stress (eutrophication, organic matter pollution, saline intrusion, etc.).

**Q12:** Define Desalination.

**Answer:**

Desalination is the method of removing minerals from saline water. Desalination refers to removing salts and minerals from a target substance, such as soil desalination, which is a problem in agriculture. Desalination converts saltwater into water suitable for human consumption or agriculture. Desalination produces brine as a by-product.

The method can be applied to municipal, industrial, or commercial purposes. Desalination procedures separate water from dissolved salts and other minerals. Brackish, seawater, wells, surface (rivers and streams), wastewater, and industrial feed and process waters are all possible sources of feedwater.

**Q13:** Discuss the mechanism of treatment of industrial wastes.

**Answer:**

The kind of the contaminant present determines how industrial waste is treated. To determine it, the pH of a medium must first be measured, and the waste must then be neutralised using appropriate acids or alkalis.

Chemical compounds dissolved in water in industrial waste products can be precipitated and removed later using appropriate chemical reactions. Photo-catalysis and ion exchangers have only lately been developed to treat industrial pollutants.

**Q14:** Which is the permitted safety limit of fluoride & lead concentration with respect to international standards of drinking water?

**Answer:**

Fluoride levels in drinking water should be about 1 ppm. This concentration is within agreed safety limits & has been demonstrated to protect teeth against decay. Fluoride in excess of 10 ppm is toxic and damaging to bones and teeth.

In drinking water, the lead concentration should be around 50 ppm.

**Q15:** What measures should be taken to check pollution by sewage?

**Answer:**

- Sewage must be whipped by machines so that the large bits may break into smaller ones & may get mixed properly. The sewage is agitated and pumped into a tank with a gradual slope. Heavier particles settle & the water flowing down is pretty clear.

- Chlorination is required to sterilise the water. Chlorination is essential, especially during wet seasons.
- Alum, lime, and other chemicals are used to treat water.

## Practise Questions on Water Management

**Q1:** Those crops which increase the nitrogen content of the soil and hence the fertility also are called \_\_\_\_\_?

- A. Cash crops
- B. Leguminous crops
- C. Fodder
- D. Food crops

**Answer:** B. Leguminous crops

**Q2:** The losses of irrigation water due to the seepage but That. does not join the underground reservoir is called \_\_\_\_\_?

- A. Seepage losses
- B. Percolation losses
- C. Evaporation losses
- D. Absorption losses

**Answer:** D. Absorption losses

**Q3:** What are the ways of water management?

**Answer:**

By reducing consumption and utilising alternate water sources, reuse or conservation of water helps to recycle ground water. Rainwater irrigation, groundwater depletion, grey water reuse, and wastewater recycling are all included in this strategy.

**Q4:** What do you mean by Biochemical Oxygen Demand (BOD)?

**Answer:**

Biochemical Oxygen Demand (BOD) is the amount of oxygen required by bacteria to break down the organic matter contained in a given volume of water.

**Q5:** What is the use of water management?

**Answer:**

Water management is the preservation and transportation of water resources in order to reduce the danger of loss of life and property while maximising their useful use. Dam and levee water management that is effective reduces the likelihood of flooding damage.

