1. Which water treatment method involves the removal of suspended particles through gravitational settling?

a) Coagulation
b) Filtration
c) Sedimentation
d) Disinfection

Answer: c) Sedimentation

Explanation: Sedimentation is the process of allowing suspended particles to settle under the influence of gravity. It is typically the initial step in water treatment, where larger particles settle at the bottom of a basin, forming a sediment layer that can be removed.

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2. What is the primary purpose of coagulation in water treatment?

a) Removal of dissolved minerals
b) Disinfection of pathogens
c) Precipitation of suspended particles
d) Adjustment of pH

Answer: c) Precipitation of suspended particles

Explanation: Coagulation involves the addition of chemicals to water to destabilize and aggregate suspended particles, forming larger particles called flocs. These flocs can then be

easily removed through processes like sedimentation and filtration.

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3. Which water treatment process involves the passage of water through a porous medium to remove suspended particles?

a) Disinfection
b) Filtration
c) Aeration
d) Water softening

Answer: b) Filtration

Explanation: Filtration involves the passage of water through a porous medium, such as sand or activated carbon, to remove suspended particles, colloids, and other impurities.

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4. What is the primary purpose of disinfection in water treatment?

a) Removal of suspended particles
b) Adjustment of pH
c) Destruction of pathogens
d) Reduction of turbidity

Answer: c) Destruction of pathogens

Explanation: Disinfection is the process of killing or inactivating pathogenic microorganisms present in water to make it safe for consumption.

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5. Which water treatment method involves the addition of oxygen to water to remove dissolved gases and volatile compounds?

a) Coagulation
b) Filtration
c) Disinfection
d) Aeration

Answer: d) Aeration

Explanation: Aeration involves the addition of oxygen to water to remove dissolved gases like carbon dioxide and volatile compounds like hydrogen sulfide through the process of diffusion.

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6. What is the primary objective of water softening in water treatment?

a) Removal of dissolved minerals
b) Disinfection of pathogens

c) Adjustment of pH
d) Reduction of turbidity

Answer: a) Removal of dissolved minerals

Explanation: Water softening is the process of removing hardness-causing minerals like calcium and magnesium ions from water, typically through ion exchange or precipitation.

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7. What are modern trends in sedimentation and filtration aimed at improving?

a) Efficiency and speed
b) Removal of dissolved minerals
c) Adjustment of pH
d) Reduction of turbidity

Answer: a) Efficiency and speed

Explanation: Modern trends in sedimentation and filtration focus on improving the efficiency and speed of these processes to meet the increasing demands for clean water in a more sustainable manner.

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8. Which miscellaneous method of water treatment involves the use of ultraviolet (UV) light

to disinfect water?

a) Ozonation
b) Chlorination
c) UV irradiation
d) Reverse osmosis

Answer: c) UV irradiation

Explanation: UV irradiation is a method of water treatment that involves exposing water to ultraviolet light to disinfect it by inactivating microorganisms such as bacteria, viruses, and protozoa.

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9. What is the purpose of ozonation in water treatment?

a) Adjustment of pH
b) Disinfection of pathogens
c) Reduction of turbidity
d) Removal of dissolved minerals

Answer: b) Disinfection of pathogens

Explanation: Ozonation involves the addition of ozone to water to disinfect it by destroying or inactivating microorganisms, organic contaminants, and odors.

10. Which miscellaneous method of water treatment utilizes membranes to remove contaminants by forcing water through them under pressure?

a) Ion exchange
b) Electrodialysis
c) Microfiltration
d) Chemical precipitation

Answer: c) Microfiltration

Explanation: Microfiltration is a method of water treatment that uses membranes with fine pores to physically separate suspended particles, microorganisms, and other contaminants from water by applying pressure to force water through the membrane.