

# Operator Quiz Fall 2021 – Chlorination

The following questions are designed for individuals/trainees pursuing certification as they prepare to take the ABC wastewater operator test. It is also designed for existing operators to test their knowledge. Each issue of *Clear Waters* will have more questions from a different process of wastewater treatment. Good luck!

**1. Calculate the chlorine demand given the following information:**

**Feed rate = 150 lbs/day**

**Flow = 11.5 MGD**

**Measured chlorine residual = 0.5 mg/L**

- a. 6.01 mg/L
- b. 1.66 mg/L
- c. 1.06 mg/L
- d. 0.66 mg/L

**2. What chemical is commonly used for dichlorination?**

- a. Sodium hypochlorite
- b. Sulfur dioxide
- c. Ozone
- d. Fluoride

**3. Which of the following treatment processes is not an acceptable way to ensure all pathogenic microorganisms are destroyed?**

- a. Filtration
- b. UV
- c. Ozone
- d. Chlorination

**4. Chlorine gas is:**

- a. Lighter than air
- b. Heavier than air
- c. Has a rotten egg smell
- d. Is odorless

**5. Calculate the chlorine residual given the following information:**

**Dosing rate = 5.8 mg/l**

**Flow = 80 MGD**

**Chlorine demand = 4.5 mg/L**

- a. 1.30 mg/L
- b. 1.03 mg/L
- c. 0.93 mg/L
- d. 0.30 mg/L

**6. Pathogenic organisms can be removed from wastewater treatment process by which of the following?**

- a. Physical removal through sedimentation and filtration
- b. Die-off through natural means and unfavorable environmental conditions
- c. Deconstruction by chemicals added to the treatment process
- d. Pathogenic organisms can be removed by all the above

**7. Which of the following parameters should not be considered when operating a disinfection system using ultraviolet light?**

- a. Keeping the UV Channel water at a constant level
- b. Preventing an excessive water level above the top lamp row
- c. Keeping UV lamps always submerged
- d. Maintaining the proper chlorine residual in the effluent

**8. To prevent violent reactions from occurring:**

- a. Never pour acid into water
- b. Never pour water into an acid
- c. Never mix two substances
- d. All are ok

**9. One pound of sulfur dioxide will neutralize how many pounds of chlorine?**

- a. 1
- b. 2
- c. 5
- d. 10

**10. Chlorine is widely used as a disinfectant in wastewater treatment, but it can also be used to:**

- a. Control odor
- b. Reduce BOD
- c. Control foaming
- d. All of the above



**Answers below.**

*For those who have questions concerning operator certification requirements and scheduling, please contact Carolyn Steinhauer at 315-422-7811 ext. 3, carolyn@nywea.org, or visit [www.nywea.org](http://www.nywea.org).*

Answers: 1. (c) 1.06 mg/L 2. (b) Sulfur dioxide 3. (a) Filtration 4. (b) Heavier than air 5. (a) 1.30 mg/L 6. (d) Pathogenic organisms can be removed by all the above 7. (d) Maintaining the proper chlorine residual in the effluent 8. (b) Pour water into an acid. 9. (a) 1 10. (d) All of the above