

ENVE FE Review Questions

Fall 2024

Environmental Engineering FE Formatted Review Questions

- Water Quality Characteristics can be categorized in four different ways. Match the provided characteristics with an appropriate category

<u>Water quality category</u>	<u>Characteristic</u>
Physical	Hardness
Chemical	Odor
Microbiological	Radon
Radiological	<i>Giardia</i>
	Lead
	Turbidity

- A Jar test is used to evaluate the coagulation process and allows the plant operator to optimize which of the following parameters.
 - Alum dosage
 - Temperature
 - Lime dosage
 - Dissolved Oxygen

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3. Estimate the alkalinity, in mg/L as CaCO_3 , of water with a carbonate ion concentration of 17.0 mg/L and a bicarbonate ion concentration of 111.0 mg/L.

- a.) 119 mg/L as CaCO_3
- b.) 128 mg/L as CaCO_3
- c.) 148 mg/L as CaCO_3
- d.) 146 mg/L as CaCO_3

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4. If the BOD_5 and ultimate BOD of a municipal wastewater are 200 mg/L and 457 mg/L respectively, what is the reaction rate constant?

- a.) 0.265 d^{-1}
- b.) 0.050 d^{-1}
- c.) 0.115 d^{-1}
- d.) 0.165 d^{-1}