

Quiz 5—BOD

CENG 340—Introduction to Environmental Engineering

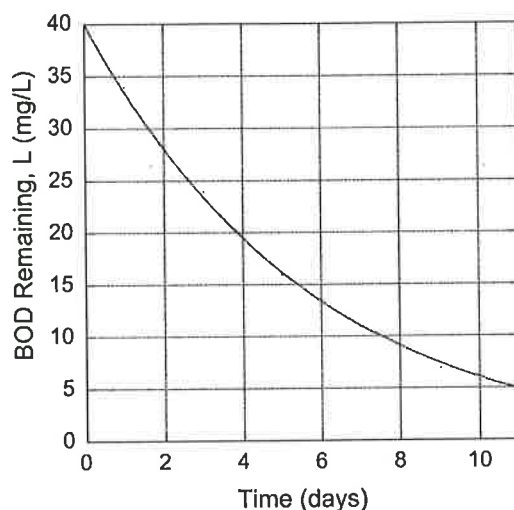
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Name:

KEY

The figure below shows a plot of BOD remaining versus time taken from a wastewater treatment plant. The data came from a BOD test which was run at 20 °C with a total sample size of 200 mL. In other words, the test was run in a 200 mL BOD bottle.



1. What is the ultimate BOD (L_0)? [2.5 pt]

$$L_0 = 40 \text{ mg/L}$$

2. What is L_5 ? [2.5 pt]

$$L_5 = 16 \text{ mg/L}$$

3. How much oxygen (in mg/L) was consumed during the first 5 days of the BOD test? [2.5 pt]

$$Y_5 = L_0 - L_5 = 40 - 16 = 24 \text{ mg/L}$$

4. How much oxygen (in mg) was consumed during the first 5 days of the BOD test? [2.5 pt]

$$\text{Mass } O_2 \text{ consumed} = Y_5 \times V = 24 \text{ mg/L} \times 200 \text{ mL} \times \frac{1 \text{ L}}{1000 \text{ mL}}$$

$$\text{Mass } O_2 \text{ consumed} = 4.8 \text{ mg}$$