CHEM 3423 001 Spring 2026 **Name:**
ID:

"Readiness" Exam

Answers:

1) A

2) B

3) A

4) D

1. Compressing a fixed quantity of gas while keeping its temperature constant produces a higher pressure because there are more molecules per unit volume after compression.
   A) True
   B) False

2. Energy cannot be lost by the system to the surroundings because the 1st Law of Thermodynamics states that energy is conserved.
   A) True
   B) False

3. A polluted lake with a surface area of 2.8×10^{9} ft^2 and an average depth of 20. ft has been determined to contain mercury at a level of 4.0×10^{-10} kg/mL. What is the total mass in kilograms of mercury in the lake?
   A) 6.3×10^{5}
   B) 3.8×10^{4}
   C) 1.3×10^{-1}
   D) 2.5×10^{-25}
   E) 1.2×10^{-18}

4. The reaction, $A(g) + 2B(g) \rightleftharpoons C(g) + D(g)$ is currently at equilibrium. Without any further information concerning the reaction, we know that,
   A) the forward and reverse reactions have ceased
   B) the concentrations of C and D are equal
   C) the concentrations of A and C are the same
   D) the rate of the forward reaction is equal to the rate of the reverse reaction