Year 12 Chemistry
Quick Quiz: Using and Controlling Reactions

1.
    (a) Using an energy profile diagram, explain the effect a catalyst has on the rate of reaction.

    (b) State the effect a catalyst has on the equilibrium position.

2. Given that $K_c = 0.5$ at 400°C for the reaction $N_{2(g)} + 3H_{2(g)} \rightleftharpoons 2NH_{3(g)}$, determine whether the equilibrium position will shift to the right, to the left, or not shift at all if the concentrations are:
    (a) $[N_2] = 0.3$ mol L^{-1}, $[H_2] = 0.4$ mol L^{-1}, $[NH_3] = 0.4$ mol L^{-1}

    (b) $[N_2] = 0.38$ mol L^{-1}, $[H_2] = 0.654$ mol L^{-1}, $[NH_3] = 0.231$ mol L^{-1}

3. For each of 2(a) and (b), discuss the net reaction (in terms of forward and back reaction).

4. Using Le Chatelier's Principle, explain the effect of increasing the pressure on the equilibrium position of the reaction in question 2.

5. State the two conditions necessary for equilibrium to occur.