1. Equiliblrium is a state of dynamic molecular behavior, meaning that

a.The amounts of product and reactant are equal

b. reactants continually turn into products at a progressively slower rate.

c. products continually turn into reactants at a progressively faster rate.

d. reactants turn into products and products turn into reactants at different rates.

e. reactants turn into products and products turn into reactants at equal rates.

2. A reversible reaction is:
a. a reaction that can occur in both forward and reverse directions
b. a reaction that alternates between going to the right and going to the left
c. a reaction that goes to completion
d. not very important to the study of equilibrium

3. A state in which the forward and reverse reactions balance each other because they take place at equal rates
a. reversible reaction
b. chemical equilibrium
c. solubility product constant
d. common ion effect
e. Le Chatalier's principle

4. The best way to be certain that any chemical equilibrium will produce the largest amount of product is to:
a. increase the temp. and decrease the pressure at the same time
b. raise the temp.
c. increase the pressure
d. keep removing product

5. If stress is applied to a system at equilibrium, the system shifts in the direction that relieves the stress.
a. reversible reaction
b. Le Chatalier's principle
c. chemical equilibrium
d. law of chemical equilibrium
e. common ion effect

6. $CoCl_4 + 6H_2O \rightleftharpoons Co(H_2O)_6 + 4Cl + Heat$

(Blue) (Pink)

If I add more Chloride ions this will cause the reaction to
a) shift to the right (products)
b) Shift to the left (reactants)
c) stay the same
d) become blue

e) become pink
f) a and e
g) b and d

7. $CoCl_4 + 6H_2O \rightleftharpoons Co(H_2O)_6 + 4Cl + Heat$

(Blue) (Pink)

If I add more water this will cause the reaction to
a) shift to the right (products)
b) Shift to the left (reactants)
c) stay the same
d) become blue
e) become pink
f) a and e
g) b and d

8. $CoCl_4 + 6H_2O \rightleftharpoons Co(H_2O)_6 + 4Cl + Heat$

(Blue) (Pink)

If I add heat to the reaction this will cause the reaction to
a) shift to the right (products)
b) Shift to the left (reactants)
c) stay the same
d) become blue
e) become pink
f) a and e
g) b and d

9. $CoCl_4 + 6H_2O \rightleftharpoons Co(H_2O)_6 + 4Cl + Heat$

(Blue) (Pink)

If I remove heat this will cause the reaction to
a) shift to the right (products)
b) Shift to the left (reactants)
c) stay the same
d) become blue
e) become pink
f) a and e
g) b and d

10. Increasing the concentration of NH3 will shift the following reaction:
$N2 + 3H2 \rightleftharpoons 2NH3$
a. to the left
b. towards the products
c. to the right
d. towards reactants
e. a and d
g. b and c
h. no effect

$$Fe^{+3} + SCN \rightleftharpoons FeSCN^{2+}$$

(Light Yellow) (Deep Red)

11. Adding $AgNO_3$ to the test tube removes SCN^- from the reaction, causing the reaction to

a.produce more reactants.

b. produce a deeper red color.

c. A, and B are correct.

d.not enough information

$$Fe^{+3} + SCN \rightleftharpoons FeSCN^{2+}$$

(Light Yellow) (Deep Red)

12. The reaction you studied becomes a deeper red color when placed in an ice bath. This means that the forward reaction is

a. There is not enough information given to answer the qusestion.

b. endothermic.

c. exothermic.

d. None of the above are correct.