**Unit 8 Review**

1. What are the two requirements of the collision theory that must be met for a chemical reaction to occur?

 1.

 2.

2.What are four ways to increase the rate of reaction? Discuss each in terms of the collision theory.

 1.

 2.

 3.

 4.

3. What are three ways to decrease the rate of reaction? Discuss each in terms of the collision theory.

 1.

 2.

 3.

4.What is the role of a catalyst in a chemical reaction? How does a catalyst affect reaction rate? How does a catalyst affect a system at equilibrium?

5.List three stresses that can be added to a system to make it shift left or right

 1.

 2.

 3.

6. Explain which direction the equilibrium will shift in the following equation when the following stresses are added to the system

CO(g) + H2O(g) 🡨🡪 CO2(g) + H2(g)

1. Increase pressure 2. Remove H2O

 3. Add CO 4. Add a catalyst

 5. Increase Temperature 6. Remove H2

7.The following is an endothermic reaction. Explain which direction the equilibrium will shift in the following equation when the following stresses are added to the system

POCl3 (g) <===> POCl (g) + Cl2(g)

1.Decrease Pressure 2. Add POCl3

 3.Remove heat 4. Add Cl2

 5. Remove POCl 6. Cool the container

8. The following is an exothermic reaction. Explain how the concentration of SO3 when the following stresses are added to the system

SO2 (g) + NO2 (g) <===> SO3 (g) + NO(l)

 1. Adding NO 2. Decreasing pressure

 3. Remove NO2 4. Add heat



Identify the following in the energy diagram to the left:

Activation Energy:

ΔH:

Is the energy diagram endothermic or exothermic?



C In the following

O concentration vs time

N graph identify the point

C where both the reactants

E and products reach

N equilibrium?

T

R

A

T

I

O

N TIME (s)