Chapter 17.1 Reading Questions

1. According to the collision model, a chemical reaction MAY occur when molecules _____ if it happens with enough energy to _____ bonds between molecules or in a way that allows new _____ to form.
2. Two things that affect the rate of a chemical reaction are _____ & _____.
3. Not all collisions between molecules have enough energy to allow a possible reaction to happen. The minimum amount of energy that is required of a collision for the reaction to occur is called the _____ _____.
4. A _____ allows a reaction to occur more easily by providing a different reaction mechanism (pathway) for the reaction to happen. The reaction happens more easily because the new pathway has a lower _____ _____ than the other one.
5. Air conditioners and refrigerators now use _____ instead of Freon –12 because when Freon-12 gets to the upper atmosphere, exposure to ultaviolet radiation produces _____ which then acts as a catalyst to the decomposition of _____. This is a problem because in the upper atmosphere _____ protects us from _____ radiation. Ironically, in the lower atmosphere (where we live) ozone, O_3, is a part of air pollution.
6. The reaction of a chemical in a liquid with a solid chemical is an example of a _____ reaction. A different example of this type (category) of reaction would be the reaction of a chemical in a liquid with a _____.
7. The reaction of a liquid chemical with a liquid chemical, or a gaseous chemical with another gaseous chemical is an example of a _____ reaction.
8. For a heterogeneous reaction involving a solid, in addition to increasing temperature or concentration the rate of reaction can be increased by increasing _____ _____ of the **solid** reactant. [Note: stirring the <u>solution</u> in effect increases the _*<u>same</u>* *<u>words</u>*_ of the aqueous or liquid reactant.]
9. When the RATE OF REACTION in the forward direction matches the RATE OF REACTION in the reverse directions the reaction is said to be at _____.
10. When a chemical reaction comes to equilibrium has the reaction stopped? _____