

Chapter 16 and 17 Exercises

Chapter 16

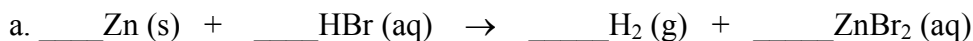
- List four changes that will increase the rate of a reaction:
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- Explain how each of these four changes increases the reaction rate:
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- Circle all of the following that are true for an exothermic reaction:
 - The energy of the reactants is higher than the energy of the products.
 - The energy of the products is higher than the energy of the reactants.
 - Energy is required for the reaction to occur, so heat can be shown as a reactant.
 - Energy is released when the reaction occurs, so heat can be shown as a product.
 - Since energy is absorbed by the reaction, the surroundings feel colder after the reaction.
 - Since energy is released by the reaction, the surroundings feel hotter after the reaction.
- Circle all of the following that are true about a catalyst:
 - Adding a catalyst increases the rate of a reaction.
 - Adding a catalyst decreases the rate of a reaction.
 - Adding a catalyst increases the activation energy for a reaction.
 - Adding a catalyst decreases the activation energy for a reaction.
 - Adding a catalyst will increase heat of a reaction (ΔH).
 - Adding a catalyst will decrease heat of a reaction (ΔH).
 - A catalyst is never consumed in a reaction.
 - A catalyst is always consumed in a reaction.
 - A catalyst eases the collision geometry requirement, so more reactants collide as needed.
- Circle all of the following that are true about a system at equilibrium:
 - The rate of the forward reaction is equal to the rate of the reverse reaction.
 - Reactants are being produced and consumed at the same rate, so the concentration of the reactants does not change.
 - Products are being produced and consumed at the same rate, so the concentration of the products does not change.
 - The concentration of reactants and products are not changing.
 - The concentration of reactants must be equal to the concentration of products.
 - Since the concentration of reactants and products are not changing, everything has stopped.
- Draw a reaction profile for an exothermic reaction. Be sure to indicate the products, reactants, activation energy, label the axis and the ΔH .

Chapter 17

7. Determine the oxidation number for each of the following:

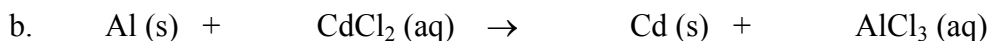
- a. H_2 H: _____
- b. Al_2O_3 Al: _____ O: _____
- c. KCl K: _____ Cl: _____
- d. MnO_2 Mn: _____ O: _____
- e. Br_2 Br: _____
- f. Mg Mg: _____
- g. NH_3 N: _____ H: _____
- h. N_2O N: _____ O: _____
- i. CO_2 C: _____ O: _____

8. For the following, balance the equation, determine the oxidation numbers, then answer the questions:



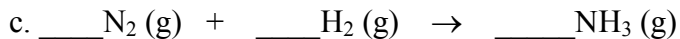
The reactant oxidized is _____, so it is the _____ agent.

The reactant reduced is _____, so it is the _____ agent.



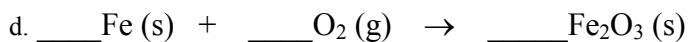
The reactant oxidized is _____, so it is the _____ agent.

The reactant reduced is _____, so it is the _____ agent.



The reactant oxidized is _____, so it is the _____ agent.

The reactant reduced is _____, so it is the _____ agent.



The reactant oxidized is _____, so it is the _____ agent.

The reactant reduced is _____, so it is the _____ agent.