Chemical Reactions: Reading Guide Chapter 7

Directions: Your responses to the following statements need to be completed on a separate sheet of paper.

1. Give 5 examples of chemical reactions that you have witnessed or experienced over the past 24 hours.
2. What does an arrow in a chemical equation show? What does a + symbol show?
3. Write word equations for the following reactions:

   Hydrogen combines with oxygen to form water

   Iron combines with oxygen for form iron (III) oxide. (rust)

   Sodium combines with water to form sodium hydroxide and hydrogen gas.
4. Explain the difference between products and reactants in a chemical reaction.
5. Where are the products found in a chemical equation? Where are the reactants found?
6. How do you indicate the physical state of a substance in a chemical equation?
7. Write the definition of catalyst. Describe an example of a catalyst.
8. Do problem #3 on page 179,.
9. Show how the following things are indicated in a chemical reaction:

   The reaction is reversible.

   A catalyst is used.

   Heat is supplied.
10. Do problem #4 on p. 180.
11. If you have 7 pedals, 6 frames, 8 handlebars and 8 wheels, how many bicycles can you make? Write a balanced equation that shows this. Leave out any unnecessary parts.
12. What is a balanced equation? Why is it necessary to balance equations?
13. Explain the difference between a coefficient and a subscript in a chemical equation. Which of these are you allowed to change in order to balance a chemical equation?
14. List and define the 5 general reaction types and write equations for examples of each.
15. Why can there be more than one possible product when a transition metal reacts with a non-metal?

16. Describe 2 methods by which old books can be preserved. Discuss the advantages and disadvantages of each method.
17. What is the "activity series"? How is it useful?
18. What products are always produced in a combustion reaction? What substance is always consumed? Why is this a concern if a combustion reaction is carried out in an enclosed area?
19. List and describe the 4 classes of fires.
20. For which of the 4 classes of fires should you not use water to extinguish? Explain why for each case.
21. Discuss the identifying characteristics of:

    combination reactions

    decomposition reactions
22. Why is the activity series important in predicting products for single replacement reactions?
23. What is the advantage of using net ionic equations to describe reactions?
24. What is a "spectator ion"?
25. Describe 3 advantages gained from making cars with composites rather than metal.
26. How does the environment benefit from using composites?