Chapter 3: Chemical Reactions

Part A: Review of Terms

Read: 3.1

Questions:

1. What is a chemical change?
2. Describe 3 diagnostic tests to confirm the presence of a new substance. [gas tests]
3. List 4 general pieces of evidence for chemical change.
4. Define the kinetic molecular theory (4 points). [also ch. 9 page 419-420]
5. Define the collision-reaction theory.
6. Describe what the reactants are doing during a successful reaction and an unsuccessful reaction according to the collision-reaction theory?
7. Draw **Figure 5** on p. 110 and include the description.
8. What is a catalyst and thoroughly describe an important reaction where a catalyst is used?
9. Why is it expensive to replace the entire exhaust system on vehicles (materials)?

Additional Questions:

p. 111, Q. 1-4; p. 113, Q. 5-7; p. 113-114, Q. 1

Part B: Types of Chemical Reactions

Read: 3.2

1. Define the combustion, synthesis, decomposition and thermal decomposition reaction types. Write a general reaction equation for each reaction type. Write a specific example for each reaction type.

Questions:

p. 117-118, Q. 1-3

Additional Questions:

p. 121-122, Q. 4-8; p. 123, Q. 1-4

Part C: Types of Chemical Reactions (continued)

Read: 3.3

Questions:

1. Define the single displacement reaction type and write a general reaction equation for it.
2. Describe, in general, what happens in many single displacement reactions.
3. Write 2 specific examples, one involving metals and one involving nonmetals, for this reaction type.
4. How are the metals and nonmetals arranged in an activity series (give 2 ways)?
5. Define alloy, corrosion, and galvanizing. Describe practical applications for each of these ideas.

Additional Questions:

p. 128-129, Q. 1-7; p. 130, Q. 8; p. 134, Q. 10-11; p. 143-144, Q. 3-5

Part D: Types of Chemical Reactions (continued)

Read: 3.4

Questions:

1. Define the double displacement reaction type and write a general reaction equation for it. Give an example of this reaction type.
2. Define solute, solvent, solubility, precipitate.
3. Describe 2 types of double displacement reactions. Write an example for each reaction type.

Additional Questions:

p. 138, Q. 1-3; p. 141-143, Q. 4-12