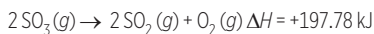


## CHAPTER 9 PRACTICE QUESTIONS

**Directions:** Review what you just learned in this chapter and test your comprehension with these practice questions. Answers can be found directly after the questions.

### Le Châtelier's Principle

1. Use the following balanced equation to determine how the following conditions will shift the equilibrium of the reaction (if at all).



- Increasing the temperature of the reaction.
- Increasing the pressure of the reaction.
- Adding more  $\text{O}_2$  when the reaction is at equilibrium.

### Organic nomenclature

2. The hydrocarbon  $\text{CH}_3\text{-CH}_2\text{-CH}_2\text{-CH=CH}_2$  is a(n):
- alkane
  - alkene
  - alkyne
  - aldehyde
3. Name the hydrocarbon above in problem 2.
4. An alkane contains three carbon atoms.
- What is the general name for this alkane?
  - How many hydrogen atoms would be contained in this alkane?

### Functional groups

5. Which of the following organic compounds does NOT contain a carbon-oxygen double bond?
- Aldehydes
  - Ethers
  - Esters
  - Ketones
6. The functional group of organic acids is the:
- amine group
  - carbonyl group
  - carboxyl group
  - hydroxyl group

### Types of radioactive decay

7. Which of the following describes the process of when an electron is ejected from a nucleus during radioactive decay?
- Alpha decay
  - Beta decay
  - Gamma decay
  - Nuclear fusion

8. Isotope X has a half-life of 30 seconds, and isotope Y has a half-life of 30 million years. Which isotope is more radioactive?
- A) Isotope X
  - B) Isotope Y
  - C) The half-lives of isotope X and Y are the same as long as they are the same element.
  - D) Unable to be determined from the information given.

**Nuclear fission vs. nuclear fusion**

9. What is the source of the Sun's energy output?
- A) Nuclear fusion
  - B) Nuclear fission
  - C) Combustion
  - D) Radioactive decay