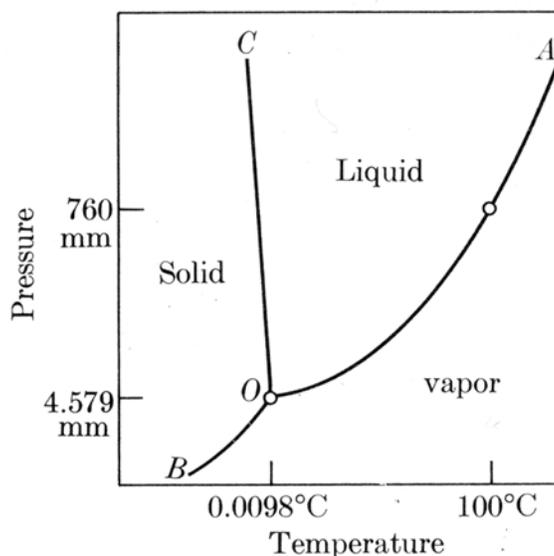
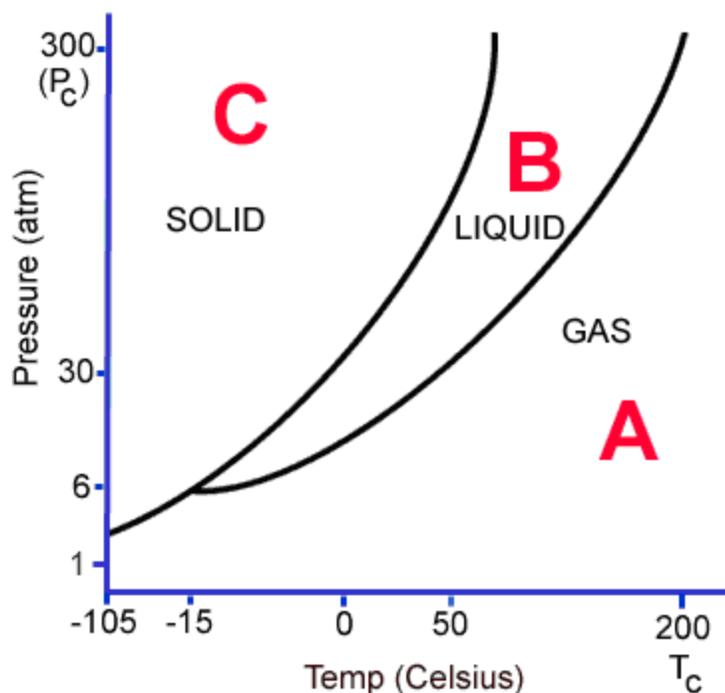


**General Chemistry**  
**Mr. MacGillivray**  
**Quiz #28:**  
**Phase Diagrams**



**Figure 1: Phase diagram for water.**

- Given the phase diagram for water, illustrated above, state what phase or phases of  $\text{H}_2\text{O}$  is/are present at each of the following temperature-pressure conditions. Circle the answer(s).
  - at any point between C and O on curve CO:      **S**      **L**      **G**
  - at any point between B and O on curve BO:      **S**      **L**      **G**
  - at point O      **S**      **L**      **G**
  - at 100 °C and 700 mm Hg      **S**      **L**      **G**
  - at 100 °C and 790 mm Hg      **S**      **L**      **G**
  - at -2 °C and 5.0 mm Hg      **S**      **L**      **G**
- What type of forces hold the oxygen atom to the hydrogen atoms within a molecule of water?
  - Intermolecular forces of attraction
  - Intramolecular forces of attraction
- What type of forces hold one water molecule onto other water molecules in a sample of water?
  - Intermolecular forces of attraction
  - Intramolecular forces of attraction



**Figure 2: Phase diagram for some other substance.**

4. At STP, the substance in the above figure can exist as
  - a) a solid or a gas
  - b) a solid only
  - c) a liquid only
  - d) a gas only
  
5. If the temperature of the substance is held constant at  $-15\text{ }^{\circ}\text{C}$ , the phase change that would occur with a pressure increase from 1 atmosphere to 30 atmospheres is:
  - a) melting
  - b) sublimation
  - c) vaporization
  - d) deposition
  
6. A phase change from Phase B to Phase C is known as:
  - a) freezing
  - b) melting
  - c) condensation
  - d) sublimation
  
7. A phase change from Phase A to Phase B is known as:
  - a) freezing
  - b) melting
  - c) condensation
  - d) sublimation
  
8. At 30 atmospheres pressure, the boiling point of this substance is:
  - a)  $-105\text{ }^{\circ}\text{C}$
  - b)  $200\text{ }^{\circ}\text{C}$
  - c)  $50\text{ }^{\circ}\text{C}$
  - d)  $0\text{ }^{\circ}\text{C}$
  
9. At 30 atmospheres pressure, the melting point of this substance is:
  - a)  $-105\text{ }^{\circ}\text{C}$
  - b)  $200\text{ }^{\circ}\text{C}$
  - c)  $50\text{ }^{\circ}\text{C}$
  - d)  $0\text{ }^{\circ}\text{C}$
  
10. The vapor pressure of this substance at  $0\text{ }^{\circ}\text{C}$  is approximately
  - a) 3 atm
  - b) 8 atm
  - c) 30 atm
  - d) 300 atm
  
11. The phase change from Phase B to Phase A is known as:
  - a) condensation
  - b) deposition
  - c) melting
  - d) vaporization