Chem 20 Test 4 Review

Tro 4th Edition

You will be given:

- A periodic table
- Electronegativity chart for polarity
- Conversion factors such as 1000 mL = 1L etc

Memorize:

The shapes of molecules based on what is around the central atoms

The Electronegativity ranges for pure covalent bonds (0-.40), polar covalent bonds (.41-2.00) and ionic bonds (>2.00)

Boyle's Law: $P_1 \times V_1 = P_2 \times V_2$

Charles' Law: $V_1/T_1 = V_2/T_2$

Combined Gas Law: $P_1 x\ V_1/\ T_1 = P_2 \times V_2/\ T_2$

Ideal Gas Law: $PV = nRT$

Chapter 10 Section 1, 2, 4-8

1. Draw the Lewis Structure of an atom #23, 25
2. Be able to correctly draw Lewis Structures of Molecules and Ions # 47, 49 a, b, d only, 53
3. Determine the electron domain geometry and molecular geometry of molecules # 61, 63, 65 a, b, c, only, 69 b, c, d only
4. Define electronegativity and use it to determine if a bond is pure covalent, polar covalent or ionic # 81, 83
5. Determine if a molecule is polar or nonpolar # 85, 89, 91b, d

Chapter 11 Sections 1-6, 8, 9, 10

1. Understand the kinetic molecular theory of gases
2. Define and understand the term pressure
3. Convert between pressure units #25
4. Use Boyle's Law to relate the pressure and volume of a gas if temperature is constant #33, 35
5. Use Charles Law to relate the temperature and volume of a gas if pressure is constant # 39, 41
6. Use the combined gas to calculate the volume of a gas then both temperature and pressure of a gas are changing # 51, 53
7. Use the ideal gas law to solve for any variable given the other four # 59, 61, 63

8. Using the ideal gas law to solve for the molar mass of a gas # 69, 71
9. Use the idea gas law to solve stoichiometry problems # 93, 95, 97
10. Perform problems involving partial pressure # 73, 75

Chapter 12 Sections 1- 6

1. Understand the difference between a solids, liquids and gases
2. Understand and define the properties that controlled by intermolecular forces- surface tension, viscosity, volatility, boiling point etc #7, 9
3. Calculate the amount of energy that required to melt or boil a substance using heat of fusion or heat of vaporization #47, 53, 55, 57
4. Define intermolecular forces including dipole-dipole forces, hydrogen bonds, and dispersions forces #1,3, 23, 25
5. Know when each of the above molecular forces occur- polar molecules, nonpolar molecules etc #59, 61, 63
6. Know the relative strengths of each of the kinds of intermolecular forces and know they effect a substances properties #13