

You should be successful on exam 4, if you can do the following (in addition to the objectives for exam 1, II, & III):

THERMOCHEMISTRY**UNIT.SECTION**

1. I.D. endothermic & exothermic rxns **Unit10, Sections 1-6**
2. Define calorie, Calorie, joule. Convert between these units
3. Use 3 of these to calculate the 4th (q, m, s, ΔT)
4. Describe the differences between heat and temperature
5. Predict and calculate changes in internal energy, work, heat
6. Predict ΔH_{rxn} in processes (+, - or ≈ 0)
7. Recognize standard state, standard conditions and state functions
8. Calculate ΔH_{rxn} using:
 - Heating/cooling curves
 - calorimetry,
 - ΔH_f° ,
 - by combining known ΔH_{rxn} values,
 - by using bond energies, **Unit 8, Sec 3**
 - by proportionality

STATES OF MATTER -GAS**Unit 11, Sections 1-5**

1. Describe the attributes of a gas
2. Convert between any two: torr, mm Hg, Pa, and atmospheres pressure
3. Describe the effect of pressure on volume (vv)
4. Describe the effect of temperature on volume (vv)
5. Define absolute zero, STP
6. Use the ideal gas law
7. Relate volume and # of moles
8. Use the combined gas law
9. Determine molecular weights of gases
10. Calculate the partial and total pressure of a gas mixture
11. Describe the Kinetic Molecular Theory
12. Calculate the rate of effusion
13. Describe deviations for ideality in gases
14. Calculate stoichiometry in gas rxns

Likely end of Exam 4**STATES OF MATTER -Liquids and Solids-****CHAPTER.SECTION****Unit 12, Sections 1-5**

1. Describe the Kinetic Molecular Theory & relate it to solids, liquids, & gases
2. Explain intermolecular forces (ion-ion, dipole-dipole; hydrogen bonding; London forces)
3. Estimate the strength of IM forces & relate this to viscosity, surface tension, evaporation, b.p., m.p., & vapor pressure
4. Describe the properties of liquids, including water
5. Interpret phase diagrams **Unit 13, section 5**
6. Describe the properties of solids, including bonding types **Unit 13, section 1 and 2a**