

STATISTICAL MECHANICS PH 664

Homework Assignments*

Chapter 1, McQuarrie: Introduction and Review: pp 28-33

Do NOT turn in the following but make sure you can do them:

19, 20, 22, 23, 24, 25, 28, 29, 30, 32, 33, 41, 42, 58, 59, 61

Do turn in the following: 49, 51, 55, 56, 57.

Also do the *Thermodynamics Review Problems* handout. Only turn in the problem 6 on $S^{\circ}(\text{O}_2, 90\text{K})$ and make sure you compare your results to the literature values.

Chapter 2, The Canonical Ensemble: pp 47-50

Do NOT turn in the following but make sure you can do them: 5, 8, 10, 11

Do turn in the following: 14, 15, 17, and both *Ensemble Problems* handout.

Chapter 3, Other Ensembles and Fluctuations: pp 64-67

Do NOT turn in the following but make sure you can do them: 6, 8, 15

Do turn in the following: 9, 10, 20

Chapter 4, Boltzmann Statistics, FD Statistics and BE Statistics

Do NOT turn in the following but make sure you can do them: 1, 2

Do turn in the following: 18, 19, 20

Chapter 5, Ideal Monatomic Gas

Do NOT turn in the following but make sure you can do them: 1, 3, 4, 5, 9, 11

Do turn in the following: 7, 17

Chapter 6, Ideal Diatomic Gas

Do NOT turn in the following but make sure you can do them: 6, 9, 13

Do turn in the following: 20, 21, 25

Chapter 7, Classical Statistical Mechanics

Do NOT turn in the following but make sure you can do them: 1, 4, 5

Chapter 8, Ideal Polyatomic Gas

Do NOT turn in the following but make sure you can do them 3, 8, 11

Chapter 9, Chemical Equilibrium

Do NOT turn in the following but make sure you can do them: 8, 10

Chapters 10 – 14 to be assigned later.

*Assignments are subject to change depending if anyone can do the problems.