

This review sheet is intended to cover everything that could be on the exam; however, it is possible that I will have accidentally left something off. You are still responsible for everything in the chapters covered except anything that I explicitly say you are not responsible for. Therefore, if I left something off of this sheet, it can still be on the exam. There will be no multiple-choice questions. Most of the questions will be like the ones in the homework assignments, and possibly a few definition questions, but I am more likely to ask questions that make you use the definitions rather than recite them.

The review session will probably be Wed., 2/16, at a time to be determined, in the normal room (I hope).

You will be given a pair of equations and asked to explain one of them. The equations at the end of the chapters will help you prepare for this part of the exam. Note that most semesters this course had four exams because it was a MWF class. So, some of the topics for this test were on Exam #2 in the past.

Chapter 1: What are macroeconomics, business cycles, recession, boom, unemployment, inflation, trade surplus, and trade deficit? Why do we aggregate and what problems does it cause? How do the Keynesian and Classical economists differ?

Chapter 2: Know what is in GDP and why the three ways of calculating it should give the same result. What is included and what is excluded? What are some reasons why using GDP to measure well-being is not accurate? Understand how GNP differs from GDP. Know $GDP + FNP = GNP$, $GNP - DEP = NNP$, $NNP - \text{Indirect Bus. Tax} + \text{Bus. Subsidy} = NI$, $NI - \text{Bus. Tax} - \text{Ret. Earnings} + TR = PI$, $PI - T = PDI$ a.k.a. DPI . In general, if you know what each of them measures, you can figure out what to include and what to exclude. Also, your book does not include everything used in the calculations. In particular, understand why depreciation, NFP , TR , INT , and T matter to the calculations. Understand what determines private, government, and national savings. Why should $S = I + CA$? What are stocks and flows? Which is savings and which is wealth? How do we calculate real GDP, the GDP deflator (or CPI), and inflation? Why did I say that $r = (i - \pi^e)/(1 + \pi^e)$ rather than the book's equation?

Chapter 3: What do the two production functions look like and why? What moves them? Unless I tell you otherwise, draw the production function with N on the horizontal axis. What is a supply shock? What determines the demand for labor? What moves it? What is the income-leisure trade off? What are the income and substitution effects and how do they relate to the supply of labor? What moves the labor supply curve? What is the full-employment level of employment, \bar{N} , and why is it not an unemployment rate of 0%? Note that we will refer to full-employment level of unemployment as the natural rate of unemployment even though they are technically slightly different. Disregard skilled and unskilled labor. Draw just the combined supply and demand of labor. How is unemployment measured? Who is classified as unemployed and who is not in the labor force? Why might the unemployment numbers be misleading? What are frictional, structural, cyclical, and seasonal unemployment? What are the two forms of Okun's Law? The equation on the bottom of page 99 only works on an annual basis if the full-employment level of GDP grows at 3%. From World War II until 1975, it grew at 2.5% and then grew at 2% until 1996, and then went back to 2.5%. (I believe that it probably has gone back down to 2%.) Therefore, the equation is inaccurate, but shows how real GDP can grow and still have unemployment grow, as in 1991 - 1992.

Chapter 4's appendix (pages 156 - 159 and 164 - 168 only): What is the inter-temporal budget constraint? Why does a change in r cause a strange movement of it (shown on page 168)? Why does that mean that r may have an uncertain effect upon current consumption? Ignore the indifference curves. What is the *Permanent Income Theory* and the *Life-Cycle Model*? Their conclusions are virtually the same, but they are different. How do they affect our model of consumption? How do they relate to Ricardian Equivalence? What effects do durable goods and borrowing constraints have on the models? You can either put a f on the future income and consumption or you can put $_t$ on the current values and $_{t+1}$ on the future values. The

former is how the book does it, and the latter is how I did it in class.

Chapter 4 only Section 4.1: What determines desired savings and desired consumption? What is the MPC and why is it important? How do current income, expected future income, wealth, and r affect consumption? What is r_{a-t} and why does it matter? How do government spending and taxes affect national savings? Why might they not affect it?

This is the non-graded Assignment #3A that will be gone over with Assignment #3.

- 1) (25 points) Draw the inter-temporal budget constraint. Illustrate the effects of an increase in the interest rate. Explain why the curve moves as drawn. Why is the affect on current savings indeterminate?
- 2) (15 points) I created an equation to explain the permanent income model. It is $c = b_p y_p + b_T y_T$. The b 's are the MPC's. The "P" subscript is for permanent and the "T" subscript means temporary. Explain this equation including giving an estimate for the size of b_p and b_T .
- 3) (25 points) Draw the life-cycle model's diagram. Show the effects of a temporary tax cut. Explain why the curve(s) moved as drawn. What happens to the level of consumption? Why?
- 4) (15 points) The book says that a tax cut will either have no effect upon total savings (S), or it will decrease. Explain both options.
- 5) (20 points) What is *Ricardian Equivalence*? Explain why it holds and how it got the name "equivalence."