

Name: \_\_\_\_\_

SID : \_\_\_\_\_

Discussion Section: \_\_\_\_\_

**Economic 100B  
Macroeconomic Analysis  
Professor Steven Wood**

**Spring 2008**

**Exam #1**

Please sign the following oath:

The answers on this test are entirely my own work. I neither gave nor received any aid while taking this test. I will not discuss the questions on this test until after 5:00 p.m. on February 21, 2008.

\_\_\_\_\_  
Signature

Any test turned in without a signature indicating that you have taken this oath will be assigned a grade of zero.

**Graph Instructions**

When drawing diagrams, the following rules apply:

1. Completely, clearly and accurately label all axes, lines, curves, and equilibrium points.
2. The original diagram and any equilibrium points MUST be drawn in black or pencil.
3. The first change in any variable, curve, or line and any new equilibrium points MUST be drawn in red.
4. The second change in any variable, curve, or line and any new equilibrium points MUST be drawn in blue.
5. The third change in any variable, curve, or line and any new equilibrium points MUST be drawn in green.

**Do NOT open this test until instructed to do so.**

**Good Luck!**

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**A. Multiple Choice Questions.** Circle the letter corresponding to the best answer. (3 points each; total of 30 points.)

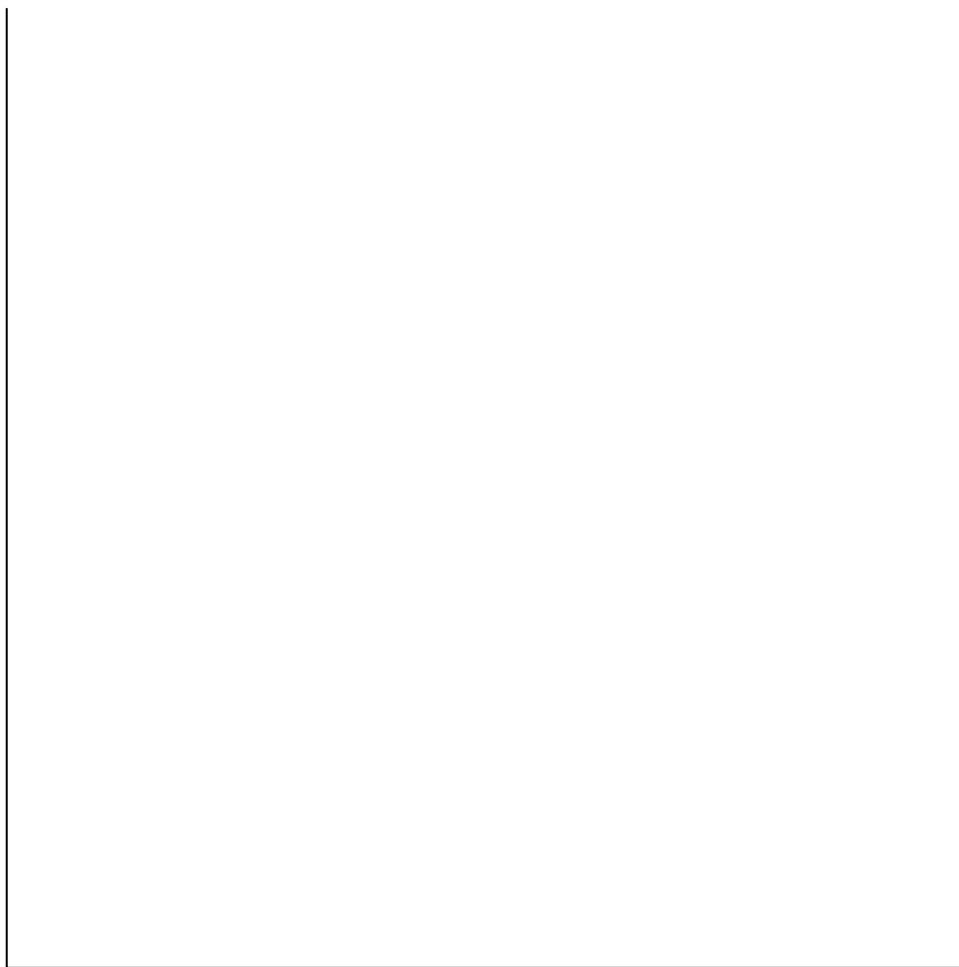
1. A winter ice storm has paralyzed the entire East Coast, reducing productivity sharply. This supply shock shifts the marginal product of labor curve:
  - a. To the right, raising the quantity of labor demanded at any given real wage rate.
  - b. To the left, reducing the quantity of labor demanded at any given real wage rate.
  - c. To the right, reducing the quantity of labor demanded at any given real wage rate.
  - d. To the left, raising the quantity of labor demanded at any given real wage rate.
  
2. Research on labor supply generally shows that labor supply:
  - a. Rises in response to a permanent increase in the real wage but falls in response to a temporary increase in the real wage.
  - b. Rises in response to a temporary increase in the real wage but falls in response to a permanent increase in the real wage.
  - c. Rises in response to both a temporary and a permanent increase in the real wage.
  - d. Falls in response to both a temporary and a permanent increase in the real wage.
  
3. The government announces a tax increase on workers' wages to take effect in the future. What happens to current employment and the real wage rate?
  - a. Both employment and the real wage rate would increase.
  - b. Both employment and the real wage rate would decrease.
  - c. Employment would increase and the real wage rate would decrease.
  - d. Employment would decrease and the real wage rate would increase.
  
4. If the substitution effect of the real interest rate on saving is larger than the income effect of the real interest rate on saving, then a rise in the real interest rate leads to a \_\_\_\_\_ in consumption and a \_\_\_\_\_ in saving for someone who is a lender.
  - a. Fall; fall.
  - b. Fall; rise.
  - c. Rise; rise.
  - d. Rise; fall.
  
5. Suppose your company is in equilibrium with its capital stock at its desired level. A permanent increase in the depreciation rate now has what effect on your desired capital stock?
  - a. Raises it because the future marginal productivity of capital is higher.
  - b. Lowers it because the future marginal productivity of capital is lower.
  - c. Raises it because the user cost of capital is now lower.
  - d. Lowers it because the user cost of capital is now higher.

6. If consumers foresee future taxes completely, a reduction in taxes this year that is accompanied by an offsetting increase in future taxes would cause:
- A rightward shift in the saving curve and a rightward shift in the investment curve.
  - No shift in either the saving or the investment curve.
  - A leftward shift in the saving curve but no shift in the investment curve.
  - No shift in the saving curve but a rightward shift in the investment curve.
7. A new pollution law requires businesses to pay for inspections of their plants by independent pollution-monitoring firms. What effect is this likely to have?
- Increases productivity.
  - Increase the capital stock.
  - Reduce productivity.
  - Increase the demand for labor.
8. An increase in pollution has caused a permanent increase in the rate of capital depreciation. This would cause:
- An increase in the capital-to-labor ratio.
  - Output-per-worker to fall,
  - A decline in consumption-per-worker.
  - No change in the capital-to-labor ratio.
9. Endogenous growth theory attempts to:
- Replace the Solow Growth model with a model in which money growth plays a key role.
  - Explain how societies can more easily reach their steady states.
  - Show how population growth reduces capital and output.
  - Explain why productivity changes.
10. A government policy that would reduce the saving rate is:
- Eliminating the social security system.
  - Giving tax breaks to increase the real return that savers receive.
  - Increasing the government budget deficit by increasing government spending.
  - Changing the tax system to tax consumption instead of income.

B. Answer BOTH of the following questions in the space provided. (35 points each, total of 70 points.)

1. **Desired Saving – Desired Investment Model.** Suppose the economy was initially in equilibrium. A fall in home prices then caused household wealth to decline significantly. In response, Congress recently passed and the President just signed an economic stimulus bill. This bill will temporarily reduce income taxes for many households and reduce the effective corporate tax rate for many businesses. Assume that Ricardian equivalence DOES NOT hold and that the wealth effect is twice as large as the income tax effect which in turn is twice as large as the corporate tax effect.

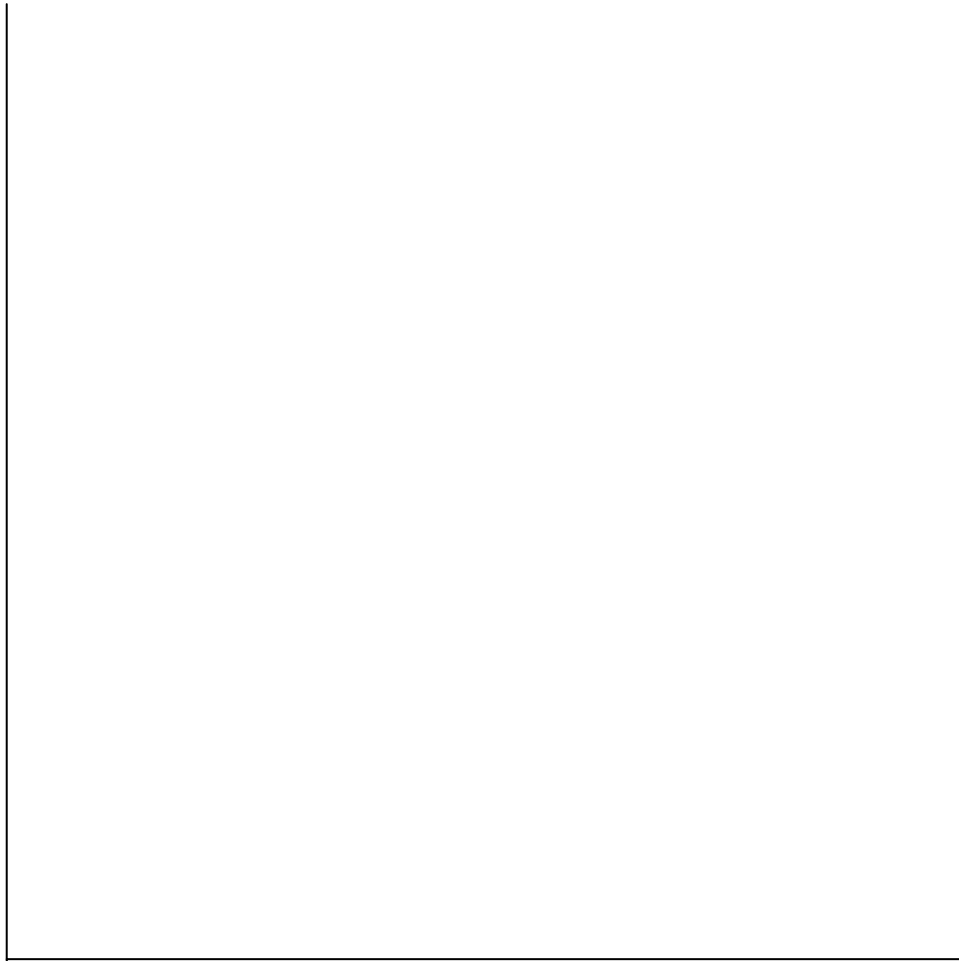
- a. Based only on this information, use a Desired Saving – Desired Investment diagram to accurately and clearly show:
  - i. The economy's initial equilibrium position,
  - ii. What effects these changes have on the economy's level of investment, saving, and the real interest rate, and
  - iii. The economy's final equilibrium position.



- b. Provide a brief economic explanation of the changes you showed in your diagram above as well as any adjustment process that occurs as the economy moves from its initial equilibrium position to its final equilibrium position. Be sure to discuss what happens to:
- i. Current consumption,
  - ii. National saving,
  - iii. Investment, and
  - iv. The real interest rate.

- c. How would your answers above be different if complete Ricardian equivalence DOES hold?

2. **Solow Growth Model.** In 2005, President Bush advocated the reform of Social Security because Americans were deemed to be under-saving for their retirement. Suppose that the U.S. economy was at its steady state in 2004 and that job skills and productivity fall with age. In response to the President's warnings about Social Security, the private saving rate in the U.S. increases substantially. At the same time, the large Baby Boom generation starts retiring in substantial numbers, a process that will take place over the next 20 years. This process lowers the average age of the workforce. The effect on the capital-to-labor ratio from the change in the saving rate is larger than the effect on the capital-to-labor ratio of changes in any other variables.
- a. Based only on this information, use a Solow Growth Model diagram to accurately and clearly show:
    - i. The economy's initial steady state,
    - ii. The effect of these changes on the economy's capital-to-labor ratio and income-per-worker, and
    - iii. The economy's final steady state.



- b. Provide a brief economic explanation of the changes you showed in your diagram above as well as any adjustment process that occurs during the transition period from the economy's initial steady state to its final steady state. Be sure to discuss what happens to the capital-to-labor ratio, the level of income-per-worker, and the rate of economic growth:
- i. At the initial steady state,
  - ii. During the transition period, and
  - iii. At the final steady state.

**THE END ☺**