Name: ____________________ (Last name, first name)
SID: ____________________

UGBA 101B
Macroeconomic Analysis for Business Decisions
Professor Steven Wood
Summer 2006
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 June 6, 2006.

____________________
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:

a. Completely, clearly and accurately label all axis, lines, curves, and equilibrium points.

b. The original diagram and equilibrium points MUST be drawn in black.

c. The first shift of any line(s) and the new equilibrium points MUST be drawn in red.

d. Any subsequent shifts in curves and new equilibrium points MUST be drawn in another color, first blue and then green.

Do NOT open this test until instructed to do so.
A. Multiple Choice Questions. Circle the letter corresponding to the best answer. (3 points each; total of 30 points.)

1. Consider the following 2 facts: a) High-income people save a larger proportion of their incomes than do low-income people and b) an increase in income inequality can lead to a fall in productivity due to political unrest. Then, according to the Solow Growth Model, a rise in income inequality will:
   a. Raise the standard of living.
   b. Lower the standard of living.
   c. Have an indeterminate effect on the standard of living.
   d. Increase steady state growth.
   e. Reduce steady state growth.

2. National savings are the sum of private and government savings. Across countries there are strong correlations between national savings and investment. This suggests that, on average:
   a. The current account is positive.
   b. The current account is negative.
   c. Exports are equal to imports.
   d. Government expenditures are equal to government revenues.
   e. Governments run budget deficits.

3. Recently in the U.S., the labor share of national income has fallen. This means:
   a. Productivity has fallen.
   b. Productivity has risen.
   c. Economic growth has fallen.
   d. Labor force growth now has a larger effect on economic growth.
   e. Capital stock growth now has a larger effect on economic growth.

4. Income levels across countries have diverged enormously over the past century. From this, we can deduce that:
   a. The convergence hypothesis holds.
   b. Absolute convergence holds.
   c. Conditional convergence might hold.
   d. Conditional convergence does not hold.
   e. Conditional convergence does hold.
5. Suppose labor force growth is 4% and the economy is below its steady state. If the labor force growth rate now falls, then we know for sure that the growth of income-per-worker is now:

   a. 0%.
   b. 4%.
   c. Below 4%.
   d. Above 4%.
   e. Could be either above or below 4%.

6. Suppose that the velocity of money doubles. Then, according to the quantity theory of money:

   a. Nominal GDP will double.
   b. Inflation will double.
   c. Real GDP will double.
   d. The price level will fall by half.
   e. The money supply will fall by half.

7. According to the Mundell-Tobin effect, an increase in inflation raises the rate of saving. Then, all of the following would be true EXCEPT:

   a. This contradicts the classical dichotomy.
   b. This raises the standard of living at the steady state in the Solow Growth Model.
   c. This will initially increase economic growth in the Solow Growth Model.
   d. This raises investment.
   e. This contradicts New Growth Theory.

8. The current rapid growth of income-per-worker in China could be due to:

   a. A fall in the saving rate.
   b. A rise in productivity.
   c. A fall in labor force growth rate.
   d. Either a. or c.
   e. Either b. or c.
9. Suppose that an earthquake destroys half of the capital stock but does not affect the labor force. As a consequence, the saving rate doubles. Then, in the new steady state (as compared to the old steady state):
   a. Economic growth will be higher.
   b. The standard of living will be lower.
   c. The standard of living could be either higher or lower.
   d. The standard of living will be higher.
   e. The capital-to-labor ratio will be lower.

10. Suppose that a 1% increase in productivity causes an increase in the growth rate of the capital stock. Then, if productivity increases by 1%, economic growth will increase by:
   a. 0.3%.
   b. 0.7%.
   c. 1.0%
   d. More than 1.0%.
   e. 1.3%.
   f. 1.7%
B. Solow Growth Model Problems. Answer BOTH of the following questions.

1. In 2005, the economy was at its steady state. In 2006, oil prices rose sharply to over $70 per barrel. As a result, many energy-intensive businesses changed their production processes to less efficient techniques. The higher price of oil also led to a big increase in imports. To offset the effects of higher oil prices on consumer budgets, the government reduced personal income tax rates. The effect of the higher oil prices on production processes was greater than the effect of the change in taxes which, in turn, was greater than the effect of imports. (35 points.)

   a. Based only on this information, use a Solow Growth Model diagram to clearly show the effects of these events on income-per-worker. Be sure to clearly identify the final steady state.
b. Provide a **brief economic explanation** of the changes you showed on your diagram as well as the adjustment process that occurs during the transition period. Be sure to **discuss** what happens to the level of income-per-worker and to the rate of economic growth during both the transition period and in the long-run equilibrium.
2. In the decade before World War I, the French economy grew by 5% per year even though the French labor force was growing by only 2% per year. During World War I, a substantial number of French soldiers were killed. These soldiers were primarily young men with limited work experience in a country where job skills rise with age. Because most of the fighting during the war occurred in the countryside, there was very little damage to the French capital stock. The war ended in 1918. In 1920, the French government raised income tax rates. (35 points.)

   a. Based only on this information, use a Solow Growth Model diagram to clearly show (1) where the French economy was before World War I (i.e., from 1900 to 1914) and (2) what effects these events would have on France’s level of income-per-worker during the 1920s (i.e., from 1920 to 1929). Be sure to clearly identify the final steady state.
b. Provide a brief economic explanation of the changes you showed on your diagram as well as the adjustment process that occurs during the transition period. Be sure to discuss what happens to the level of income-per-worker and to the rate of economic growth before the war, during the transition period after the war, and in the long-run equilibrium.