Midterm Exam #1: 14.02

Spring 2000

Full Name:
TA Name:
Section Time:

STOP! Failure to follow these instructions may be detrimental to your grade.

The exam consist of 2 parts on 3 pages. Please answer all of the questions completely. The total score is 60. You have 90 minutes to complete the exam. **Please use two blue books for the exam, one for each part.** Be sure to LEGIBLY write your full name, TA's name, section time, and *part number* on the front of each blue book. When finished with the exam, you must return all blue books and this signed exam sheet to a proctor.

Show your calculations and explain all answers in your blue books. If you think that any question is ambiguous, then say so in your answers and explain what assumptions you made to resolve the ambiguity.

You can use a calculator, but no notes or other assistance are allowed.

GOOD LUCK!

Part I – Blue Book 1. This part consists of two questions: question 1 and question 2.

Question 1. True or False? Explain your answer in at most 2 sentences (12 points total).

1. (2 points) In the context of short-run IS-LM analysis, it is possible to increase output without raising the interest rate by pursuing a fiscal expansion and a monetary expansion at the same time.

2. (2 points) The LM curve is upward sloping because the demand for money rises with either a rise in income or a rise in interest rates.

3. (2 points) The profits of a US owned factory in Mexico are included both in US GDP and in the Mexican GNP.

4. (2 points) The "paradox of saving" is that a shift to a higher saving rate can depress short-run output but also facilitate long-run output growth.

5. (2 points) The unemployment rate is defined as the ratio of jobless people to the entire population.

6. (2 points) If the correlation between X and Y is positive, then the slope coefficient in the regression of Y on X is also positive.

Question 2. Multiple choice. Choose the answer that is most correct. Do not provide an explanation for your answer (24 points total).

1. (3 points) If the unemployment rate falls below a certain level, the Fed might raise the interest rate because it is worried that:
a) Exports are too low.
b) Government tax revenues are too high.
c) The rate of inflation might increase.
d) Consumers are saving too much.

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2. (3 points) In the standard National Accounting identity for GNP, which of the following is *not* part of G?
a) Government transfer payments.
b) Salaries of government employees.
c) The purchase of a new submarine for the Navy.
d) Construction of public schools.

3. (3 points) An increase in government spending will have a larger effect on output:
a) The larger is the propensity to consume.
b) The larger is the share of imports in GDP.
c) If it is also accompanied by an increase in taxes.
d) None of the above.

4. (3 points) A large R^2 value for a regression indicates that
a) we have large residuals.
b) there is a causal relationship between our dependent and explanatory variables.
c) the model fits poorly.
d) a and c
e) none of the above

5. (3 points) The unemployment-inflation policy tradeoff
a) is related to involuntary unemployment.
b) is no longer relevant in the US.
c) was misunderstood in the 1960s.
d) a and c
e.) all of the above

6. (3 points) Which statements are correct?
a) The difference between gross and net national product is the depreciation of capital.
b) Wages are less than 50% of the US GDP.
c) GDP measures the output produced by factors owned by the US in a given year.
d) a and c
e) none of the above

7. (3 points) If foreigners start buying more US goods then:
a) US output increases and interest rates increase.
b) US output increases and interest rates decrease.
c) US output decreases and interest rates increase.
d) US output decreases and interest rates decrease.

8. (3 points) US real GDP growth was less rapid in the 1980s than in the 1960s because:
a) Financial assets did not rise as rapidly in the 1980s.
b) The capital stock of machines and plants rose less rapidly in the 1980s.
c) Productivity growth was less rapid in the 1980s.
d) b and c
e) a and b

Part II – Blue Book 2. This part consists of one question: question 3.

Question 3. Building a model (24 points total).

Here are the behavioral patterns in an economy.
1. Consumers spend mpc% of their wages after tax payments (T) and transfer receipts (V).
2. Workers are paid 80% of GDP as wages.
3. Business investment equals GDP minus wages, plus an extra 100 for each percentage point interest rates (r) are less than 5.
4. Defense spending and education are fixed at g each.
5. Foreign buyers uniformly purchase x in US goods and services.
6. 25% of all consumer, export, government and investment goods are imported.
7. The Government recycles one-third of tax revenue back to citizens as pension and welfare payments.
8. Public Money demand (L) equals 10% of GDP plus an extra 100 for each percentage point interest rates fall below 5.
9. The government collects 25% of wages as income taxes and 10% of GDP in sales taxes.
10. The Federal Reserve has fixed the money supply at K.

a) (10 points) Write out an equation for each of the 10 "facts" listed above.

b) (8 points) Create an equation for each of the primary GDP elements–C, I, G, X, M– as functions of only the exogenous parameters, GDP, and r.

Now combine the appropriate equations to:

c) (3 points) Write out the equation for the IS curve, assuming the mpc equals (5/9), with GDP as the dependent variable.

d) (3 points) Write out the equation for the LM curve with r as the dependent variable.