PRACTICE FIRST EXAM (B) (answers on last page)

During an actual exam, students will be required to sign the following statement:
By signing below, I certify that I have not had any books, notes, calculators, phones, or blank paper
on my desk or available in sight at any time during this exam:

________________________________________ student signature
________________________________________ date

PART I: MULTIPLE CHOICE—circle the correct answer (4 points each, 28 points total)

1.) Which of the following is the best definition of potential GDP?
   a.) the maximum level of output that the economy could potentially produce
   b.) the level of output predicted by the long-run model
   c.) the level of output $Y$ that satisfies the equation $Y = C + I + G + EX - IM$
   d.) none of the above

2.) Which of the following occurred during the Great Recession but not in any other U.S. recessions
   since World War II?
   a.) financial turmoil
   b.) a spike up in the unemployment rate
   c.) a spike up in oil prices
   d.) a drop in investment spending

3.) The Great Recession is dated 2007-2009. Which of the following is an accurate description of
   what happened during the year 2012?
   a.) U.S. real GDP rose and Euro area real GDP rose
   b.) U.S. real GDP fell and Euro area real GDP fell
   c.) U.S. real GDP fell and Euro area real GDP rose
   d.) U.S. real GDP rose and Euro area real GDP fell

4.) When the U.S. Federal Reserve increases the interest rate it causes
   a.) the IS curve to shift up
   b.) the IS curve to shift down
   c.) movement along the IS curve to the right
   d.) movement along the IS curve to the left

5.) Which of the following would decrease a bank’s net equity? Hint: think about what each change
   means for both sides of the balance sheet.
   a.) the bank sells a security that it holds in order to raise cash
   b.) the bank writes off losses on existing loans that it now acknowledges won’t be repaid
   c.) the bank’s owners invest some additional money of their own in the bank
   d.) none of the above
6.) Which of the following is the most important reason that countries like Congo, Angola, and Brazil have had inflation that averaged in hundreds of percent per year over the last 20 years?
   a.) the money supply in these countries grew at average rates of hundreds of percent per year over the last twenty years
   b.) the level of output averaged more than 20% above the level of output predicted by the long-run model over the last twenty years
   c.) the level of output averaged more than 20% below the level of output predicted by the long-run model over the last twenty years
   d.) potential GDP has actually been shrinking in these countries on average over the last twenty years

7.) Suppose that the Federal Reserve holds the nominal interest rate constant at a time when expected inflation is going up. The result would be
   a.) an increase in the real interest rate
   b.) no change in the real interest rate
   c.) a decrease in the real interest rate
   d.) an increase in the marginal product of capital

PART II: FILL IN THE BLANK (4 points each, 18 points total)

8.) (4 points) U.S. real GDP today is about 16 trillion dollars. The Congressional Budget Office estimates that potential real GDP is about 17 trillion dollars. Write down an estimate of today’s short-run output. You can write your estimate as a fraction rather than try to calculate the percent.

9.) (4 points) Suppose that last year the inflation rate was 1% and this year’s short-run output equals 2%. If the slope of the Phillips Curve is 1/2, what would this year’s inflation rate be predicted to be?

10.) (4 points) In January 2004 the yield on a 1-year U.S. Treasury security was 1.3% while the yield on a 10-year U.S. Treasury security was 4.2%. What’s the single most important reason why the 10-year rate was so much higher than the 1-year rate at that time?
11.) (6 points) The following balance sheet gives you some of the information for a hypothetical central bank. Show how the numbers would change if the central bank were to loan an additional 100 to private banks.

<table>
<thead>
<tr>
<th>Assets</th>
<th>Liabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loans to banks 400</td>
<td>Deposits with central bank 200</td>
</tr>
<tr>
<td>Securities 400</td>
<td>Cash in circulation 700</td>
</tr>
<tr>
<td>Other 200</td>
<td>Other 100</td>
</tr>
</tbody>
</table>

PART III: SHOW YOUR ANSWER ON A GRAPH (44 points total)

12.) (29 points total) You are asked to fill in the details on the graph below so that it shows the effect in our baseline IS-MP model of a temporary increase in government spending that is financed by increasing the deficit. You should assume that before the change in spending, the economy has been in an equilibrium for some time in which output equals potential output, inflation has been steady at 2%, and the marginal product of capital has been steady at 3%.

   a.) (14 points) Label the variables that are being measured on the horizontal and vertical axis so that the graph would correspond to an IS-MP diagram. Show the initial position of the IS and MP curves before the change in spending and indicate on your graph the numerical values for the variables on the horizontal and vertical axis in the initial equilibrium.

   b.) (6 points) Show how the IS and MP curves shift as a result of the change.

   c.) (6 points) Label on your diagram what the new resulting values for the variables would be on the horizontal and vertical axis.

   d.) (3 points) Now suppose instead of the baseline model we had assumed that some (but not all) consumers take into account the fact that the higher deficit today means higher taxes will be owed in the future. Describe in one sentence (but do not show on your graph) the main thing that would be different in your diagram in this case.
13. (15 points total) You are asked to fill in the details on the graph below so that it shows the effect on the Phillips Curve in our baseline model of the change in government spending that was examined in the previous problem. You should assume that before the change, the economy has been in an equilibrium for some time in which output equals potential output, inflation has been steady at 2%, and the marginal product of capital has been steady at 3%.

a.) (10 points) Label the variables that are being measured on the horizontal and vertical axis so that the graph would correspond to a Phillips Curve. Show the initial position of the Phillips Curve and indicate on your graph the numerical values for the variables on the horizontal and vertical axis in the initial equilibrium.

b.) (5 points) Show the effects of the indicated change on the diagram.
Answers
1b 2a 3d 4d 5b 6a 7c 8 -1/17 9 2% 10 people expected the Fed to start raising interest rates
11 loan to banks up 100 and deposits up 100

12

![Graph showing IS and IS' curves with MP line]

d) increase in $\bar{Y}$ would be smaller

13

![Graph showing PC line with $\Delta \pi$ and $\Delta \pi'$]