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

1.) Which of the following is the most plausible description of why real GDP falls during a typical recession?
   a.) the capital stock falls
   b.) the population falls
   c.) the level of spending falls
   d.) the overall price level falls

2.) Which of the following did not contribute to the run-up in house prices over 2002-2005?
   a.) the global savings glut
   b.) the fed funds rate was kept low
   c.) mortgage securitization
   d.) movement along the Phillips Curve

3.) Which of the following is correct?
   a.) real GDP fell much more during the Great Recession than it did during the Great Depression
   b.) real GDP fell much less during the Great Recession than it did during the Great Depression
   c.) real GDP fell by about the same amount during the Great Recession and the Great Depression
   d.) the Great Recession and the Great Depression are just two different expressions that are used to describe the same episode

4.) An increase in the investment tax credit would cause
   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 leverage? 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 add some new equity capital to the bank
   d.) none of the above
6.) If the central bank wants to bring inflation down, it should  
   a.) increase the interest rate and increase the money supply  
   b.) decrease the interest rate and decrease the money supply  
   c.) decrease the interest rate and increase the money supply  
   d.) increase the interest rate and decrease the money supply  

7.) Which of the following variables would you look at to get the best predictor of whether this year’s inflation will be higher than last year’s?  
   a.) the difference between this year’s and last year’s rate of growth of the monetary base  
   b.) the difference between this year’s and last year’s rate of growth of M2  
   c.) the difference between this year’s and last year’s unemployment rate  
   d.) the difference between this year’s actual and this year’s potential GDP  

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

8.) (4 points) Suppose that this year’s actual real GDP is 103, potential real GDP is 100, and the unemployment rate is 5%. Calculate short-run output.  

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) Suppose that the current yield on a 1-year Treasury bond is 0.5%, and you have a perfect crystal ball that tells you that in February 2018 the 1-year rate will be 1.0%. For what current yield on a 2-year bond would you be just indifferent between buying the 1-year bond today and buying the 2-year bond today?
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 conducts an open market sale of 100.

<table>
<thead>
<tr>
<th>Assets</th>
<th>Liabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loans to banks</td>
<td>Deposits with central bank 200</td>
</tr>
<tr>
<td>400</td>
<td>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 an increase in $a_c$ where consumption is assumed to be given by $C_t = a_c Y_t$, where $Y_t$ denotes potential output. You should assume that before the change in $a_c$, 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 $a_c$ 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 $C_t = a_c Y_t + x Y_t$ where $0 < x < 1$ and $Y_t$ denotes short-run output. 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 if there is a big exogenous increase in oil prices. 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:
1c 2d 3b 4a 5c 6d 7d 8 +3% 9 +2% 10 0.75% 11 securities down 100 deposits down 100

12

\[ R \]

3

MP

IS'

IS

0 \( \tilde{Y} \)

d) increase in \( \tilde{Y} \) would be bigger

13

\[ \Delta \pi \]

0

PC'

PC

0 \( \tilde{Y} \)