Multiple Choice: (30 points total, 3 points each) Choose the best answer. Write on scantron.

1) Suppose that the quantity theory of money holds, and that prices are completely flexible. If money growth is 2% per year in the U.S., GDP is growing at 2%, and velocity is constant, then the inflation rate should be:
   a) -2%
   b) 0%
   c) 2%
   d) 4%

2) According to the Fisher relation, if the inflation rate is expected to be 3% this year and the nominal interest rate is 2%, then the ex-ante real interest rate is:
   a) -1%
   b) 1%
   c) 2%
   d) 5%

3) Which of the following is helpful in ending a case of hyperinflation:
   a) cut money supply growth
   b) cut government spending
   c) raise taxes
   d) all of the above

4) A difference between the long and short run is:
   a) prices are sticky in the long run only.
   b) monetary and fiscal policy affect output only in the long run.
   c) demand can affect output in the short run but not the long run.
   d) the classical dichotomy holds in the short run but not the long run.

5) All of the following may have contributed to the Great Depression, except:
   a) a fall in government spending
   b) a fall in investment due to expectations
   c) a fall in money supply
   d) a fall in taxes

6) A temporary adverse supply shock (like a rise in the cost of oil) will cause which of the following to happen in the short run:
   a) prices to rise and output to fall.
   b) prices to fall and output to rise.
   c) both prices and output to rise.
   d) both prices and output to fall.

7) Which of the following helps explain why aggregate demand slopes down:
   a) People buy more of a good when it is less expensive.
   b) Prices are sticky in the short run.
   c) A fall in real money balances causes the interest rate to rise in the money market.
   d) When income rises, people want to hold less money.

8) In the Keynesian Cross model, the government purchases multiplier is
   a) less than 1.
   b) equal to 1.
   c) greater than 1.
   d) We cannot know for sure.

9) Which of the following would tend to make the LM curve steeper:
   a) investment is very responsive to the interest rate
   b) money demand is very responsive to income
   c) money demand is very responsive to the interest rate
   d) the multiplier is large

10) If you want fiscal policy to be effective in raising output, you want ____ to be responsive to ____.
    a) money demand, income.
    b) investment, interest rate.
    c) money demand, interest rate.
    d) both a and b.
Problem 1: AS-AD / Quantity Theory  (15 points total, 5 points each part)
Assume the Quantity Theory of Money holds, and that prices are fixed in the short run but completely flexible in the long run. Suppose the following event: the widespread introduction of debit cards recently in the U.S. economy has resulted in a permanent rise in the velocity of money in our economy. (Assume the economy had started off at the full-employment level of output.)

a) Draw and label the aggregate demand curve implied by the Quantity Theory of Money here, and the short run and long run supply curves implied above. Label the initial equilibrium as point 1.
b) Show on your graph what happens due to the permanent rise in velocity. Show arrows to indicate any curve movements, and label the short-run equilibrium as point 2. What happens to the price level and output? (rise, fall, no change, ambiguous).
c) Now label the long-run equilibrium on your graph as point 3. What happens to the price level and output now (be specific)?

Problem 2: Keynesian Cross  (20 points total)
Suppose the government of Italy is considering raising taxes to lower its budget deficit, but the government is nervous that it might generate a recession as a side effect. Use the Keynesian cross to analyze the short-run effects of this (so you must assume that investment is not a function of the interest rate). Assume that consumption is just a function of disposable income, with a constant marginal propensity to consume of 0.8.

a) (8 points) How much would output fall if taxes rise 10 million? Explain in 1-2 sentences.
b) (6 points) Compute what is happening to consumption here.
c) (6 points) Knowing Keynesian theory, you propose to the Italian government that they increase government purchases to prevent the recession. Given that taxes rise by 10 million, compute how much government purchases would have to rise to keep output constant.

Problem 3: IS-LM  (20 points total)
The Federal Reserve recently increased the money supply. Use IS-LM to analyze the short run implications of this policy.

a) (8 pts) Graphically illustrate the short-run effect of this policy in an IS-LM graph. Be sure to label the axes, the curves, and use arrows showing the direction the curves shift. Also mark the initial equilibrium as point ‘1’, and the short-run equilibrium as point ‘2’.
b) (6 pts) What will happen to the levels of the interest rate and output? (rise, fall, no change, ambiguous)
c) (6 pts) Suppose that investment is more responsive to changes in the interest rate than assumed above. How would this change your answers to part (b)? Do the interest rate and output change more, less, the same, or is it impossible to tell? Explain why in 1-2 sentences.
Problem 4: More IS-LM  (10 points)
Suppose that a country is experiencing a recession in which not only is GDP falling, but investment, consumption, and the interest rate (real and nominal) all are falling also. Which of the following shocks could explain this recession – indicate all that apply:

- rise in money demand
- exogenous fall in consumption demand (such as due to low confidence, as discussed in class)
- exogenous fall in investment demand (such as due to pessimism, as discussed in class)

Explain your reasoning in a few sentences.
(Make the usual assumptions, that prices are completely sticky in the short run, money demand is a function of output and the interest rate, investment is just a function of the interest rate, and consumption is just a function of disposable income.)