Midterm 2

CODE OF HONOR PLEDGE:

I will not give or receive aid on this examination. I understand that if I am aware of cheating on this exam, I have an obligation to inform Professor Brooks. I also understand that Professor Brooks will follow the University of Notre Dame Academic Code of Honor if he detects acts of academic dishonesty.

Signature: _____________________________________
Printed Name: __________________________________
Date: __________________________________________

Part I: Basic Concepts (6 of 100 points)

a) What are the three functions of money?

   Unit of Account, Store of Value, Medium of Exchange

b) What does it mean for a bank to be “too big to fail”?

   Because a bank is so large that it is crucial to the operation of the economy, they perceive that if they are in danger then the government will bail them out. Therefore they take more risk.

c) What is “fractional reserve banking”?

   Banks keep a fraction of deposits in reserve and generate revenue by making loans with the rest of the deposits.
Part II: Expected Present Value (14 of 100 points)

You are representing an athlete who is signing her first professional contract. She is offered contracts by three different teams. Each contract offers a signing bonus that she receives today for sure. Then each contract specifies money she receives one, two, and three years from now. Each of these payments has no uncertainty. Each contract may give a bonus at the end of the first year if she gets the Rookie of the Year (ROY) award, which she has a 20% chance of winning. At the end of the third year, she receives the Most Valuable Player (MVP) award with a 40% chance, and may receive a bonus.

Your client is risk neutral and can borrow and lend at a 5% interest rate. Compute the expected present value of each contract. Round to the first decimal place.

<table>
<thead>
<tr>
<th>Team</th>
<th>Signing Bonus</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>ROY Bonus</th>
<th>MVP Bonus</th>
<th>Expected Present Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atlanta</td>
<td>$0</td>
<td>$4.5</td>
<td>$5</td>
<td>$6</td>
<td>$0</td>
<td>$0</td>
<td>14</td>
</tr>
<tr>
<td>Boston</td>
<td>$7</td>
<td>$2</td>
<td>$2</td>
<td>$1</td>
<td>$2</td>
<td>$3</td>
<td>13</td>
</tr>
<tr>
<td>Chicago</td>
<td>$1</td>
<td>$3</td>
<td>$3</td>
<td>$3</td>
<td>$7</td>
<td>$13</td>
<td>15</td>
</tr>
</tbody>
</table>

(values are in millions of dollars)

Your client values these contracts only based on their expected present value. Which team’s contract should she choose? **Chicago**

Now suppose that your client is risk averse. Which team’s contract would she be more inclined to choose? **Atlanta** Why? **All money is guaranteed.**

Again assuming that your client is risk neutral, which team’s contract would she select if interest rates were much higher (say, 20%)? **Boston** Without making any calculations, explain your answer in words. **When interest rates are high, payments that occur sooner have relatively higher value. Boston offers a very large immediate payment**
Part III: AD-AS and the Phillips Curve (10 of 100 points)

Suppose that, due to changes in long run military objectives, the government decides to permanently reduce spending on the military.

a) Write “increase” or “decrease” to indicate which curve(s) shifts in the short run:
   AD: decrease    SRAS: _______    LRAS: _______    Phillips Curve: _______

b) The economy is initially in a long run equilibrium. Illustrate this in an AD-AS diagram and the Phillips Curve diagram below, label the equilibrium A.

   ![Diagram](image)

   See slide 8 of the supplemental slides

   c) In the same chart as part b, illustrate the effect of the change in spending in the short run, and label the new short run equilibrium B.

d) How does this shock affect GDP, prices, inflation and unemployment in the short run, compared to the equilibrium at point A? (up or down)
   Y: down    P: down    u: up    i: down

e) Write “increase” or “decrease” to indicate which curve(s) shifts in the long run:
   AD: _______    SRAS: increase    LRAS: _______    Phillips Curve: decrease

f) Illustrate this shifting of curves in the same graphs as above. In both graphs, label the new equilibrium point C.

g) How does this shock affect GDP, prices, inflation and unemployment in the long run, compared to the equilibrium at point A? (up or down)
   Y: same    P: down    u: same    i: down
Part IV: Multiple Choice (70 of 100 points)

For each question, choose exactly one correct answer.

1) Which of these are included in M1?
   a. Savings accounts
   b. Credit card balances
   c. Currency in circulation
   d. Currency in bank vaults

2) Suppose there the nominal interest rate is 5% and the inflation rate is 3%. What is the real interest rate for the average saver?
   a. -2%
   b. 2%
   c. 5%
   d. 8%

3) Which of the following statements about inflation next year would be made by a person who has rational expectations?
   a. “The Fed set a target of 2% for inflation next year, and I believe they are credible and capable of doing it. Therefore, I expect inflation of 2% next year.”
   b. “This year inflation was 3%. Therefore, I expect inflation next year to be 3%.”
   c. “Average inflation over the past 150 years has been 4%. Therefore, I expect inflation next year will be 4%.”
   d. “The average forecast of professional forecasters for inflation next year is 5%. Therefore, I expect inflation next year to be 5%.”

4) During the Great Recession, the Federal Reserve decided to:
   a. Bail out all banks to keep the financial system from collapsing
   b. Bail out some banks and allow others to fail
   c. Not bail out the major banks to encourage them to take less risk in the future
   d. Bail out only small banks and allowed the large banks to fail

5) If people have rational expectations, then:
   a. The SRAS curve is nearly horizontal
   b. The AD curve is nearly horizontal
   c. The SRAS curve is nearly vertical
   d. The AD curve is nearly vertical
6) The equity premium is defined as:
   a. **The difference in returns between stocks and treasury bonds**
   b. The difference in volatility between stocks and treasury bonds
   c. The difference in returns between stocks and gold
   d. The difference in returns between risky stocks and safe stocks

7) Suppose there is a reserve requirement of 10% and people pull $1,000,000 out of their checking accounts and hold it as cash. How much has the money supply changed?
   a. Decrease of $1,000,000
   b. **Decrease of $9,000,000**
   c. Decrease of $10,000,000
   d. None of these

8) Consider two separate economies in Country A and Country B. The two countries are identical, except that Country A has a much flatter AD curve than does Country B. Suppose both countries experience the same temporary decrease in aggregate supply. Which of the following is true about the short run equilibrium?
   a. Country A experiences a larger fall in real GDP and a larger fall in prices than does Country B.
   b. Country A experiences a smaller fall in real GDP and a larger fall in prices than does Country B.
   c. **Country A experiences a larger fall in real GDP and a smaller fall in prices than does Country B**
   d. Country A experiences a smaller fall in real GDP and a smaller fall in prices than does Country B

9) According to the Austrian Theory of the Business Cycle, the Fed perpetuates the business cycle because by reducing interest rates the Fed ends up:
   a. Causing firms to hire so many workers that they eventually must shut down, firing their workers and causing a recession
   b. Moving resources away from long term investment and towards unsustainable short term consumption
   c. Encouraging banks to take too much risk, exacerbating the “too big to fail” problem, ultimately leading to bank failures
   d. **Causing investors to invest in bad projects, which ultimately causes a recession when it is realized that they were bad**
10) An important benefit of commodity money compared to fiat money is that:
   a. The quantity of commodity money cannot be influenced by anyone
   b. Governments cannot be tempted to increase the supply of commodity money to finance their other activities
   c. Commodity money allows for the government to respond using monetary policy during recessions
   d. With commodity money, less of the commodity is available for use in other industries

11) Suppose there is a temporary increase in the price of iron ore. Then:
   a. Inflation and unemployment decrease
   b. Inflation decreases and unemployment increases
   c. Inflation increases and unemployment decreases
   d. Inflation and unemployment increase

12) Households begin buying a hot new product. Then in the short run:
   a. Inflation and unemployment decrease
   b. Inflation decreases and unemployment increases
   c. Inflation increases and unemployment decreases
   d. Inflation and unemployment increase

13) Major criticisms of the US government during the Great Depression include:
   a. The Fed increased the money supply by too much, and the government increased spending by too much
   b. The Fed allowed the money supply to fall, and the government reduced government spending
   c. The Fed allowed the money supply to fall, and the increase in government spending took a long time
   d. The Fed’s goal was to keep the money supply fixed, and the government raised taxes at the beginning of the depression

14) One way the government could reduce the debt to GDP ratio is:
   a. Reduce inflation
   b. Reduce growth
   c. Reduce deficits
   d. Either a or c
15) Suppose the money supply is $240. There are 100 $1 bills in the economy, which are either held by households, or are deposited in banks. The reserve requirement is 20% and there are no excess reserves. How many of the $1 bills are held in banks?
   a. 25  
   b. 35  
   c. 40  
   d. 60

16) An advantage of stocks compared to bonds is:
   a. Double taxation of dividends  
   b. Voting rights  
   c. Predictable cash flow  
   d. Lower variance in returns

17) What are the “automatic” and “discretionary” parts of government spending?
   a. Automatic spending stimulates demand while discretionary does not  
   b. Discretionary needs coordination with monetary policy while automatic does not  
   c. Automatic spending does not contribute to deficits while discretionary does  
   d. **Automatic spending does not need deliberate action by government to implement while discretionary does**

18) The equity premium is surprising because it is:
   a. Positive, which means you always make a higher return investing in stocks  
   b. **Large, which is consistent with investors being implausibly risk averse**  
   c. Small, which means it is better to save only in stock for retirement  
   d. Zero, which means there is no premium for risk

19) Tommy is offered a flip of a fair coin. If heads comes up, he receives $1. If tails comes up, he must pay $1.10 cents. Tommy accepts this offer. This shows that he is:
   a. Risk loving  
   b. Risk neutral  
   c. Risk averse  
   d. Either a or b

20) Suppose the government wished to decrease in inflation. They can do this by:
   a. Cutting taxes  
   b. Raising government expenditure  
   c. **Increasing the federal funds rate**  
   d. Reducing reserve requirements
21) According to Keynes, “sentiments” affect the economy through:
   a. Changes in productivity
   b. Changes in consumption
   c. Changes in government spending
   d. All of the above

22) Suppose the Fed increases the money supply in response to a temporary supply
    shock. In the long run this leads to:
   a. Permanently higher unemployment
   b. Permanently lower GDP
   c. Permanently higher prices
   d. Permanently lower inflation expectations

23) According to the “natural rate hypothesis,” if unemployment is equal to its natural
    rate then which of these is guaranteed to be true?
   a. Inflation is lower than inflation expectations
   b. Inflation is equal to inflation expectations
   c. Inflation is greater than inflation expectations
   d. None of these

24) What do the Keynesian theory of the business cycle and the Real Business Cycle
    (RBC) theory predict about the shape of the short run aggregate supply curve?
   a. In the Keynesian theory it is upward sloping and in RBC it is nearly vertical
   b. In the Keynesian theory it is upward sloping and in RBC it is nearly horizontal
   c. In the Keynesian theory it is flat and in RBC it is nearly vertical
   d. In the Keynesian theory it is flat and in RBC it is upward sloping

25) Inflation fell from 3% last year to -1% this year. Disinflation is:
   a. 1%
   b. -1/3
   c. 4%
   d. 1/3

26) If the sacrifice ratio is constant and the same in every context, then the example of
    the 1920s hyperinflation in Germany implies that its value is:
   a. Near zero
   b. About 5
   c. About -5
   d. Over one hundred billion
27) According to the quantity theory of money, positive inflation implies:
   a. Growth rate of real GDP < Growth rate of money
   b. Growth rate of real GDP > Growth rate of money
   c. Growth rate of nominal GDP < Growth rate of money
   d. Growth rate of nominal GDP > Growth rate of money

28) The “Taylor Rule” says that:
   a. Nominal interest rates must be positive
   b. Federal government debt should be less than 100% of GDP
   c. The Fed should target the federal funds rate according to a formula
   d. The Fed should target inflation to 2%

29) Banks engage in “maturity transformation” by:
   a. Converting their short term assets into long term liabilities
   b. Converting their short term liabilities into long term assets
   c. Converting their long term assets into short term liabilities
   d. Converting their long term liabilities into short term assets

30) Stockholder’s equity is equal to the value of:
   a. All assets in the firm
   b. The difference between all assets and all liabilities
   c. The difference between total reserves and demand deposits
   d. All revenue minus all expenses

31) Under a fractional reserve banking system, the money multiplier is:
   a. Zero
   b. Less than one
   c. One
   d. Greater than one

32) Which of these is true about the “natural rate of output”?
   a. It is the level of real GDP when unemployment is at its natural rate
   b. It is the level of real GDP when inflation equals inflation expectations
   c. It is the level of real GDP when prices equal price expectations
   d. All of the above
33) The US dollar is backed by:
   a. Gold
   b. Silver
   c. Both gold and silver
   d. None of the above

34) The zero lower bound refers to the idea that:
   a. **Nominal interest rates cannot go below zero**
   b. Real interest rates cannot go below zero
   c. Inflation cannot go below zero
   d. Unemployment cannot go below zero

35) “Excess reserves” are:
   a. **Reserves kept by banks beyond their reserve requirement**
   b. Reserves kept by the Fed to lend out to banks as needed
   c. Loans from the Fed to stimulate bank lending
   d. Loans from non-bank financial firms to banks