Practice 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

a) What is moral hazard?

When behavior changes because downside risk is borne by someone else.

b) What is the equity premium?

The difference between the average historical returns of the stock market (i.e., the S&P 500 stock index), and government treasury securities.

c) Suppose the Fed wants to increase the money supply using open market operations. Briefly describe how the Fed does this.

To increase the money supply, the Fed buys treasury securities from primary dealers. In payment for these securities, the Fed simply adds reserves to the primary dealer’s reserve account.
Part II: Asset Pricing

Suppose you have four years until retirement and want to start a small business. The businesses you could start vary in their risk and potential profitability. Compute the present value of each potential business assuming that the market interest rate is 5%:

1) You can open a gas station, which would make a profit of $30,000 per year for four years, then sell it for $600,000 at the end of the fourth year. There is no risk that the business will fail. \[ 30 / 1.05^{1} + 30 / 1.05^{2} + 30 / 1.05^{3} + 630 / 1.05^{4} = 600 \]

2) You can open a used car dealership. It will make a profit of $200,000 per year for four years, then sell it for $2,000,000 at the end of the fourth year. There is a 37% chance per year that the business will fail and be worth nothing. \[ 200 \times 0.63 / 1.05^{1} + 200(0.63 / 1.05)^{2} + 200(0.63 / 1.05)^{3} + 2200(0.63 / 1.05)^{4} = 520.32 \]

3) You can open a carwash, which would make a profit of $100,000 per year for four years, then you can sell it for $1,000,000 at the end of the fourth year. There is a 16% chance per year that the business will fail and be worth nothing. \[ 100 \times 0.84 / 1.05^{1} + 100(0.84 / 1.05)^{2} + 100(0.84 / 1.05)^{3} + 1100(0.84 / 1.05)^{4} = 645.76 \]

It costs $500,000 to open any of these three businesses. You have three options:

4) You can pay $500,000 out of your checking account. What is the present value of $500,000 in cash today (don’t overthink it)? \[ 500 \]

5) You can take out a loan against your house for $500,000. You will have to pay $25,000 in interest for each of the next four years, then pay it off for $475,000 in four years. Since you do not want to lose your house, you will not default. What is the present value of the loan? \[ 25 / 1.05^{1} + 25 / 1.05^{2} + 25 / 1.05^{3} + 500 / 1.05^{4} = 479.43 \]

6) You can sell a tech stock that you now own for $500,000. That stock pays no dividends, and four years from now there is a 50% chance it will be worth $1,000,000, and a 50% chance it will be worth $250,000. What is the present value of the stock? \[ 0.5 \times 250 / 1.05^{4} + 0.5 \times 1000 / 1.05^{4} = 514.19 \]

You can only open one business. Which should you open (1, 2 or 3)? 3
Which one of the three ways to pay for it should you choose (4, 5 or 6)? 5
If you were risk averse, which business might you be inclined to choose instead? 1
Part III: Costs and Benefits of Fed Intervention

Suppose nuclear plants are shut down, temporarily raising the price of electricity for manufacturers making production more expensive for them.

a) Write “up” or “down” to indicate the shifting of one or more of these curves:
   AD: ___________  AS: down

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

[caption]

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See Slide 6 from “Mechanics of AD-AS”

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c) In the same chart as part b, illustrate the effect of this shock in the short and long run, assuming the Fed does not intervene.

d) How does this shock affect GDP and prices in the short run, compared to the equilibrium at point A? Label the short run equilibrium point B.
   Y: down   P: up

e) How does this shock affect GDP and prices in the long run, compared to the equilibrium at point A? Label the short run equilibrium point C.
   Y: same   P: same

f) Now suppose that the Fed intervenes. Redo part b below, and illustrate the effect of the Fed intervention in the short and long run. Label the equilibrium in the short run after Fed intervention point D. How are GDP and prices affected relative to point A?

[caption]

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See Slide 15 from “Mechanics of AD-AS”

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Y: same   P: up

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g) What happens in the long run after the Fed intervenes? **Stay at D**

h) What are the costs and benefits to the Fed intervening to this shock? **Benefit:** shorter recession; **Cost:** permanently higher prices
Part IV: Multiple Choice

1) Which of the following is a consequence of the “too big to fail” problem?
   a. Banks have so much capital that they do not fail when they make bad investments, so that they aren’t discouraged from risk-taking
   b. Banks become increasingly concentrated so that they can behave like monopolists, charging consumers high prices
   c. **Banks take more risk because they anticipate a government bailout if they fail**
   d. None of the above

2) Which of the following is an example of moral hazard?
   a. Insured farmers saving more money
   b. Health insurers dropping coverage when patients develop chronic illnesses
   c. **Insured drivers driving more dangerously**
   d. House owners buying more insurance in flood zones

3) Mortgage originators were willing to make loans to very risky borrowers in the period before the Great Recession in part because:
   a. The mortgage originators thought they were too big to fail
   b. Government guaranteed the return on mortgage backed securities
   c. **They did not bear the risk of the mortgages**
   d. No bank has faced a run since the Great Depression

4) Menu costs have the effect of:
   a. Reducing the real effect of monetary policy because businesses cannot easily change their prices
   b. Reducing the effect of fiscal policy on real output because government vendors do not charge as much for their goods
   c. Reducing the effect of aggregate demand shocks because businesses cannot react immediately to changes in the economy
   d. **Increasing the effect of aggregate demand shocks because businesses cannot react immediately to changes in the economy**

5) Banks benefit from taking correlated risks because:
   a. Interest rates and stock returns are highly correlated
   b. The crowding out effect increases interest rates
   c. The government is less likely to raise taxes if they all profit simultaneously
   d. **The government is more likely to bail them out if they all fail simultaneously**
6) Which of the following is true when comparing the gold standard to fiat money?
   a. Human action cannot affect the quantity of money under the gold standard
   b. **Government can’t use monetary policy to fight recessions with the gold standard**
   c. Exchange rates are more stable under the gold standard
   d. Inflation rates under a gold standard are low and stable

7) A bank can only experience a bank run when:
   a. It has untrustworthy leadership
   b. **People have a change in their beliefs**
   c. It has a large number of depositors
   d. It has made bad investments

8) During most recessions:
   a. Consumption decreases by more than GDP decreases
   b. **Investment decreases by more than GDP decreases**
   c. Government purchases decrease by more than GDP decreases
   d. None of the above

9) If actual prices are higher than price expectations and wages are sticky:
   a. Labor is relatively expensive, so output goes down
   b. **Labor is relatively cheap, so output goes up**
   c. Labor is relatively expensive, so output goes up
   d. Labor is relatively cheap, so output goes down

10) During the Great Depression, Federal Reserve policy hurt the economy because its leaders decided to:
    a. Abandon the gold standard and move to fiat money
    b. **Allow banks to fail and allowed the money supply to fall**
    c. Greatly increase the money supply resulting in heavy inflation
    d. Greatly increase taxes and government spending

11) Which of the following is **not** one of the tools the Fed can use to affect monetary policy?
    a. Purchase and sale of bonds from primary dealers
    b. Change in the discount rate offered to banks
    c. **Change in the interest rate charged on government debt**
    d. Change in reserve requirements
12) Which of the following increases the money supply?
   a. A run on banks.
   b. The Fed selling bonds to primary dealers.
   c. **The Fed reducing reserve requirements.**
   d. People decreasing the fraction of their cash that they keep in banks.

13) Suppose the reserve requirement ratio is 0.08. Then the money multiplier is:
   a. 1.08
   b. 0.92
   c. **12.5**
   d. 1.92

14) Which of these is not one of the three functions of money?
   a. Unit of Account.
   b. **Stable Rate of Exchange**
   c. Store of Value.
   d. Medium of Exchange.

15) Which of these accurately describes the Misperceptions Theory of the upward sloping short run aggregate supply curve?
   a. Firms negotiate labor contracts infrequently based on their expectations of prices, and may adjust their labor usage when realized prices are other than expected.
   b. **Firms incorrectly believe that the relative price of their output has risen when in fact the aggregate price level has risen.**
   c. Firms cannot perfectly process all information about the quality of their labor at every point in time.
   d. Firms may invest in bad projects because Fed action causes them to incorrectly compute the present value of their investments.

16) Suppose cash in circulation increases by $1,000,000 and all other categories of money stay the same. Which of the following is true?
   a. M0 increases by $1,000,000
   b. M1 increases by $1,000,000
   c. M2 increases by $1,000,000
   d. **All of the above**
17) An economy has $100, with a 20% reserve requirement and banks hold no excess reserves. All money is either held in cash by households or are in deposit accounts. Which of the following is true?
   a. If 10% is held in cash, then the money supply is $140.
   b. If 20% is held in cash, then the money supply is $500.
   c. If 20% is held in cash, then the money supply is $400.
   d. If 30% is held in cash, then the money supply is $380.

18) The federal funds rate is the interest rate charged:
   a. On government debt
   b. On lending to banks by the government
   c. On lending by banks to mortgage borrowers
   d. On lending to banks by other banks

19) Which of the following is a part of M2 and not a part of M1?
   a. Small-Denomination Time Deposits
   b. Traveler’s Checks
   c. Checkable Deposits at Commercial Banks
   d. Currency

20) Under the Austrian theory of the business cycle, the Fed:
   a. Can only affect prices, but not output, using monetary policy.
   b. Causes or exacerbates the business cycle by reacting to it.
   c. Should reduce the money supply during recessions.
   d. Should increase the money supply during recessions.

21) Under the Real Business Cycle theory, the Fed:
   a. Can only affect prices, but not output, using monetary policy.
   b. Causes or exacerbates the business cycle by reacting to it.
   c. Should reduce the money supply during recessions.
   d. Should increase the money supply during recessions.

22) Under the Keynesian theory, the Fed:
   a. Can only affect prices, but not output, using monetary policy.
   b. Causes or exacerbates the business cycle by reacting to it.
   c. Should reduce the money supply during recessions.
   d. Should increase the money supply during recessions.
23) The benefit of diversifying your asset portfolio is:
   a. Lower market risk
   b. **Lower portfolio risk**
   c. Increased returns
   d. Decreased management costs

24) A benefit that the gold standard has that fiat money does not have is:
   a. The value of gold is stable
   b. Human action cannot affect the money supply under the gold standard
   c. If gold is used as money, less is available for industrial purposes
   d. **It is harder to substantially increase the quantity of gold than it is to increase the quantity of fiat money**

25) Suppose there is a permanent increase government purchases. In the AD-AS diagram, the only difference between the long run and the short run is that in the long run:
   a. AD shifts left
   b. AD shifts right
   c. **SRAS shifts left**
   d. LRAS shifts right