Money, Banking, and Financial Markets (Econ 353): Section 1
Midterm Examination I
February 8, 2005

Name_______________________________________ Univ. Id #______________________

Note: Each multiple-choice question is worth 4 points. Problems 20, 21, and 22 carry 10, 8, and 10 points, respectively.

1) Which of the following are true statements?
A) Money or the money supply is defined as anything that is generally accepted in payment for goods and services or in the repayment of debts.
B) Inflation is a condition of a continually rising price level.
C) The inflation rate is measured as the rate of change in the aggregate price level.
D) All of the above are true statements.

2) Which of the following statements about the characteristics of debt and equity is untrue?
A) They can both be long-term financial instruments.
B) They can both be short-term financial instruments.
C) They both involve a claim on the issuer's income.
D) They both enable a corporation to raise funds.

3) The Foreign Exchange Market
A) Allows one currency to be converted into another.
B) Helps maintain a stable price for the gold which backs U.S. dollars.
C) Becomes less important as globalization of financial markets increases.
D) Is where U.S. goods are exchanged for foreign currency.

4) When interest rates fluctuate, which bonds will experience the least price volatility?
A) 10-year bonds
B) 5-year bonds
C) 1-year bonds
D) 20-year bonds

5) Which of the following are benefits of Financial Intermediaries?
A) Financial Intermediaries channel funds from savers to borrowers.
B) Financial Intermediaries allow people to time their purchases better.
C) Financial Intermediaries provide a safe way for savers to earn a return on their savings.
D) Financial Intermediaries do all of the above.
6) If Mary deposits $100 of her currency in her checking account, then:
   A) M1 will increase by $100.
   B) M1 and M2 will not change
   C) M2 will increase by $100.
   D) M2 will fall by $100.

7) A corporation acquires new funds only when its securities are sold
   A) in the primary market by an investment bank.
   B) in the primary market by a stock exchange broker.
   C) in the secondary market by a securities dealer.
   D) in the secondary market by a commercial bank.

8) *(Bonus Question)* The news report “Why Foreigners Buy America?” highlights that
   A) foreign investors keep buying US securities despite rising trade deficits in America
   B) in November, foreigners bought an amount of American assets which was higher than that
     bought in October and surprised financial analysts
   C) the biggest buyers of these assets are foreign central banks
   D) all of the above are true.

9) The problem created by asymmetric information before the transaction occurs is called _____, while the problem created after the transaction occurs is called _____.
   A) adverse selection; moral hazard
   B) moral hazard; adverse selection
   C) costly state verification; free-riding
   D) free-riding; costly state verification

10) The conversion of a barter economy to one that uses money increases efficiency by reducing
   A) the need to exchange goods.
   B) the need to specialize.
   C) the need to employ team production methods.
   D) transactions costs.

11) If the price level doubles, the value of money
   A) doubles.
   B) more than doubles, due to scale economies.
   C) rises but does not double, due to diminishing returns.
   D) falls by 50 percent.
12) Which of the following statements accurately describes the three different measures of the money supply--M1, M2, and M3?
A) The three measures do not move together, so they cannot be used interchangeably by policymakers.
B) The three measures' movements closely parallel each other, even on a month-to-month basis.
C) Short-run movements in the money supply are extremely reliable.
D) Both (a) and (c) of the above.

13) People hold money even during inflationary episodes when other assets prove to be better stores of value. This can be explained by the fact that money is
A) extremely liquid.
B) a unique good for which there are no substitutes.
C) the only thing accepted in economic exchange.
D) all of the above.

14) If there are five goods in a barter economy, one needs to know ten prices in order to exchange one good for another. If, however, there are ten goods in a barter economy, then one needs to know _____ prices in order to exchange one good for another.
A) 20
B) 25
C) 30
D) 45

15) In which of the following situations would you prefer to be making a loan?
A) The interest rate is 9 percent and the expected inflation rate is 7 percent.
B) The interest rate is 4 percent and the expected inflation rate is 1 percent.
C) The interest rate is 13 percent and the expected inflation rate is 15 percent.
D) The interest rate is 25 percent and the expected inflation rate is 50 percent.

16) The interest rate that equates the present value of payments received from a debt instrument with its value today is the
A) simple interest rate.
B) discount rate.
C) yield to maturity.
D) real interest rate.

17) If the interest rates on all bonds rise from 5 to 6 percent over the course of the year, which bond would you prefer to have been holding?
A) A bond with one year to maturity
B) A bond with five years to maturity
C) A bond with ten years to maturity
D) A bond with twenty years to maturity

18) Which of the following are true statements?
A) Wealth is the total collection of pieces of property that are a store of value.
B) Money is frequently confused with income.
C) Income is a flow of earnings per unit of time.
D) All of the above are true.
19) Which of the following $1,000 face-value securities has the highest yield to maturity?
A) A 5 percent coupon bond with a price of $600
B) A 5 percent coupon bond with a price of $800.
C) A 5 percent coupon bond with a price of $1,000.
D) A 5 percent coupon bond with a price of $1,200.

20. You inherited a huge amount of money (more than a million) recently and want to invest it for next two years.

(a) Your bank is offering you a certificate of deposit with an annual interest rate of 10%. There is another option you want to consider: a 2-year 10% coupon bond with a face value of $10,000, at a price of $10,100. How will you choose between the two options without using a financial calculator? Show your work. (5 points)

(b) Suppose your bank was offering you only 9.5% annual interest rate. What will you do now (again, without using a financial calculator)? Show your work. (5 points)
21. A 6-month treasury note with a face value of $1000 is selling at $950 on a discount basis. 
(a) If the annual rate of inflation is expected to be 1%, what is the expected real rate of 
return? Show your work. (6 points)
(b) Will the investor be better off, if the actual inflation turns out to be 0% instead? Show 
your work. (2 points)
22. Suppose you buy a 5-year zero-coupon (discount) bond with a Face Value of $1000, at a yield to maturity of 5%.
   (a) What is its selling price? Show your work (4 points)
   (b) Exactly 2 years later, the interest rates rise to 10%. If your holding period is 2 years i.e., you have to sell this bond after two years, what price will you end up selling at? Show your work. (4 points)
   (c) What is your effective rate of return in part (b)? Show your work. (2 points)
20. Part (a). A 10% coupon bond with a price above its Face Value will have its yield to maturity less than 10%. The other alternative, which offers 10%, will be preferable.

Part (b). Now with 9.5% deposit rate, let’s first obtain the present value of the bond’s cash flow

\[ PV(\text{at } 9.5\%) = \frac{1000}{1.095} + \frac{1000}{1.095^2} + \frac{10000}{1.095^3} = 10087 \]

Since the bond is priced at 10100, which is greater than 10087 (the present value at 9.5%), its yield to maturity must be less than 9.5%. The bank’s offer is still preferable.

21. Part (a). If the annual return is \( i \), then the nominal return is obtained from

\[ 950 = \frac{1000}{(1 + i)^2} \]

(Note: You can also use \( 950 = \frac{1000}{(1+i)^{\frac{1}{2}}} \). The results will be approximately similar)

or

\[ i = \left( \frac{1000}{950} \right)^2 - 1 = 0.108 (= 10.8\%) \]

Hence, the expected real rate of return (annual) is

\[ i_r = i - \pi_e = 10.8 - 1 = 9.8\% \]

Part (b) If the actual inflation rate turns out to be 0% the actual real rate of return will be

\[ i_r = i - \pi_a = 10.8 - 0 = 10.8\% \]

The investors will be better off.

22. Part (a). Given that its yield to maturity is 5%, the current price (at time \( t \)) will be

\[ P_t = PV \ (\text{at YTM}) = \frac{1000}{1.05^5} = 783.53 \]

Part (b). Two years later, at 10% interest rate the price will fall. Since the remaining cash flow is still $1000 face value payment, but now after three years, the price after two years (say, at \( t + 2 \)) will be

\[ P_{t+2} = PV \ (\text{at } 10\%) = \frac{1000}{1.10^3} = 751.31 \]

Part (c). The rate of return will be given by

\[ P_{t+2} = P_t (1 + i)^2 \]
which implies that

\[ i = \left( \frac{P_{t+2}}{P_t} \right)^{\frac{1}{3}} - 1 = \left( \frac{751.31}{783.53} \right)^{\frac{1}{3}} - 1 = -0.0208 \approx -2.08\% .\]