Finance 30220
Practice Midterm #2

1) Suppose that you observe the following yield curve:

Term	**Annual Yield**
90 Day	1.5%
180 Day	2%
1 year	2.25%
2 year	2.75%
3 year	3%
4 year	3.5%
5 year	4.5%

   a) Calculate the price of a 90 day T-Bill with $1000 of face value.
   b) Suppose that inflation is expected to be 1.2% over the coming year. Calculate the real return on a 180 day T-Bill.
   c) Calculate the price of a 3 year T-Note with $1,000 of face value and a 4% annual interest payment using the current yield curve.
   d) Assuming a zero liquidity premium, calculate the market's expectation of the 1 year interest rate 3 years from now.

2) Explain the difference between the following:
   a) Savings vs. Investment
   b) Income vs. Wealth
   c) Money vs. Income

3) The Acme Widget Co. has the following technology for widgets.

# of Fabricators	# of Widgets (per yr)
1	250
2	490
3	610
4	710
5	790
6	850
7	890

Looms cost $1000 apiece while the widgets can be sold for $2 apiece. Fabricators depreciate at a rate of 15% per year and the nominal interest rate is 5%.

a) Calculate the value marginal product of capital and the user cost.

b) How many fabricators should the widget company purchase?

4) Suppose that you work for IBM and you are one year away from retirement. You are currently earning $75,000 per year, but you expect your retirement income to be $30,000 per year. You can borrow and lend at 5% per year and. there is no inflation. Further, assume that the price level is $1.

   a) Sketch your budget set for spending this year and next year. Be sure to label the relevant points. Would you most likely be a borrower or a lender? Explain.
   b) How would an increase in the interest rate effect your decision in (a)?
   c) Suppose you learn that the government is going to reduce your social security benefits by 10%. How would your savings decision change?

5) Suppose that you are currently a senior in college. You earn $10,000 per year working at the campus bookstore. You expect to earn $60,000 next year. You can deposit money in a savings account that pays 4% interest per year. You also have a credit card that charges 10% interest on all purchases. (For simplicity, assume that you get charged interest regardless of when you pay the bill). Assume that there is no inflation and that consumer goods cost $1 apiece.

   a) Given the above information, plot out you set of possible choices for current/future spending (**Be careful…..it's not a straight line!**)
   b) Assuming that your preferences are like most college student's, indicate a likely choice on the above graph for current/future spending.
   c) Suppose that you win $1,000 in a lottery. Show how this would impact your answers to (a) and (b).
   d) How can consumer savings behavior explain the behavior of interest rates over the business cycle?

6) Suppose that the government increases spending by $200B without increasing taxes (i.e. the government runs a $200B deficit):
   a) Assuming that households view this spending as a "free lunch" (i.e. they don't believe that they will have to repay this deficit) explain the impact of this deficit on interest rates, consumption, savings, and investment.
   b) How would your answer to (a) change if households recognized that the deficit has to be repaid eventually.

7) Suppose that computerization increases average productivity in the US by 5%. This improvement is viewed as a permanent improvement.
    a) Explain the impact of this news on labor demand and labor supply. What happens to the real wage and total employment?
    b) Explain the impact of this event on GDP, Savings, Investment, and the interest rate.

8) Explain the three basic functions a commodity must satisfy to be functional as money.

9) Suppose that the Federal Reserve wishes to increase the money supply. Specifically, it would like to increase the M1 money supply by 5%. We have the following information about the banking sector:

    Currency in Circulation: $500
    Checkable Deposits: $1,000
    Bank Reserves: $100

    a) What is the current monetary base? What is the M1 money supply? What is the multiplier?
    b) Given your answer to (a), by how much would the Federal Reserve have to increase the monetary base?
    c) What policy tools does the Federal Reserve have at its disposal to increase the monetary base?
    d) What impact would this 5% increase in the monetary base have on the economy in the short run/long run?

10) Suppose that the availability of online banking dramatically lowers the demand for money.
    a) Explain the impact of this drop in demand in the short run.
    b) What will the long run impact be?

11) Suppose that the economy experiences a permanent increase in productivity.
    a) Analyze the short term/long term effects using the labor market/capital market/money market framework.
    b) Repeat (a) using the IS-LM-FE framework.

12) Suppose that fears of global terrorism lower corporate investment expenditures. Use the IS-LM-FE framework to analyze short term long term economic impact on employment, output, interest rates and prices.