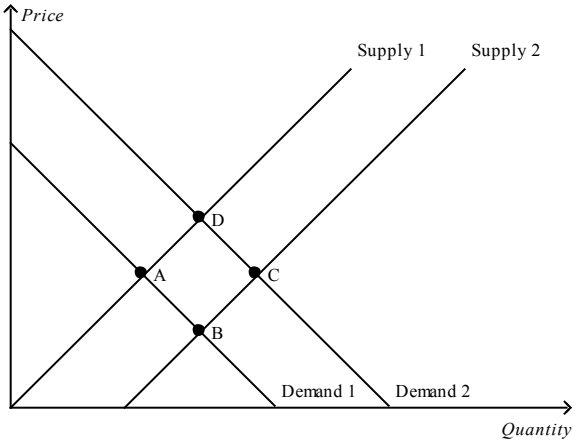
EC102 Final Exam

Part 1: Multiple Choice

1. What would happen to the equilibrium price and quantity of lattés if the cost of producing steamed milk, which is used to make lattés, rises?
   a. Both the equilibrium price and quantity would increase.
   b. Both the equilibrium price and quantity would decrease.
   c. The equilibrium price would increase, and the equilibrium quantity would decrease.
   d. The equilibrium price would decrease, and the equilibrium quantity would increase.

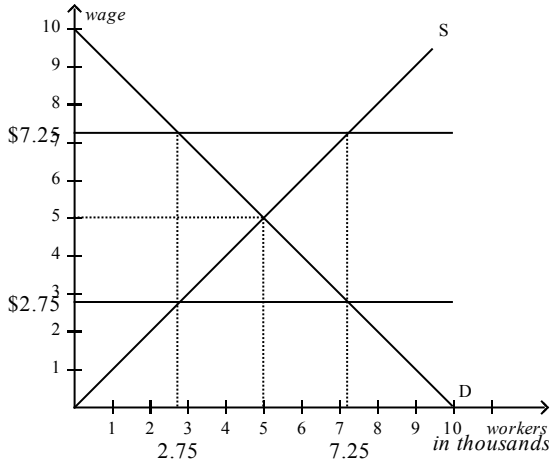
2. Which of the following events must result in a higher price in the market for Snickers?
   a. Demand for Snickers increases, and supply of Snickers decreases.
   b. Demand for Snickers and supply of Snickers both decrease.
   c. Demand for Snickers decreases, and supply of Snickers increases.
   d. Demand for Snickers and supply of Snickers both increase

Figure 4-21



3. **Refer to Figure 4-21.** Which of the following movements would illustrate the effect in the market for orange juice of an announcement by the American Dental Association that orange juice erodes tooth enamel?
   a. Point A to Point B
   b. Point C to Point B
   c. Point C to Point D
   d. Point A to Point D

Figure 6-13



4. **Refer to Figure 6-13.** In this market, a minimum wage of $7.25 is
   a. binding and creates a labor shortage.
   b. binding and creates unemployment.
   c. nonbinding and creates a labor shortage.
   d. nonbinding and creates neither a labor shortage nor unemployment.

5. **Refer to Figure 6-13.** In this market, a minimum wage of $7.25 creates a labor
   a. shortage of 2,250 workers.
   b. shortage of 4,500 workers.
   c. surplus of 2,250 workers.
   d. surplus of 4,500 workers.

6 .**Refer to Figure 6-13.** In this market, a minimum wage of $2.75 creates a labor
   a. shortage of 2,250 workers.
   b. shortage of 4,500 workers.
   c. surplus of 2,250 workers.
   d. neither a labor shortage nor surplus.

7. The Surgeon General announces that eating apples promotes healthy teeth. As a result, the equilibrium price of apples
   a. increases, and producer surplus increases.
   b. increases, and producer surplus decreases.
   c. decreases, and producer surplus increases.
   d. decreases, and producer surplus decreases.

8. Raisin bran and milk are complements. An increase in the price of raisins will
   a. increase consumer surplus in the market for raisin bran and decrease producer surplus in the market for milk.
   b. increase consumer surplus in the market for raisin bran and increase producer surplus in the market for milk.
   c. decrease consumer surplus in the market for raisin bran and increase producer surplus in the market for milk.
   d. decrease consumer surplus in the market for raisin bran and decrease producer surplus in the market for milk.

9. Ralph pays someone to mow his lawn, while Mike mows his own lawn. Regarding these two practices, which of the following statements is correct?
    a. Only Ralph's payments are included in GDP.
    b. Ralph's payments as well as the estimated value of Mike's mowing services are included in GDP.
    c. Neither Ralph's payments nor the estimated value of Mike's mowing services is included in GDP.
    d. Ralph's payments are included in GDP, while the estimated value of Mike's mowing services is included in GDP only if Mike voluntarily provides his estimate of that value to the government.

10. Al's Aluminum Company sells $1 million worth of aluminum to Shiny Foil Company, which uses the aluminum to make aluminum foil. Shiny Foil Company sells $4 million worth of aluminum foil to households. The transactions just described contribute how much to GDP?
    a. $1 million
    b. $3 million
    c. $4 million
    d. $5 million

11. One bag of oranges is sold for $6.00 to a company that turns them into juice which is sold to consumers for $12.00. Another bag of oranges is purchased by a grocery store for $6.00 who then sells it to a consumer for $7. Taking these four transactions into account, how much is added to GDP?
    a. $31
    b. $25
    c. $19
    d. None of the above is correct.

12. The price index was 128.96 in 2006, and the inflation rate was 24 percent between 2005 and 2006. The price index in 2005 was
    a. 104.
    b. 104.96.
    c. 152.96.
    d. 159.91.

Table 11-3

The table below pertains to Studious, an economy in which the typical consumer's basket consists of 5 books and 10 calculators.

Year	Price of a Book	Price of a Calculator
2006	$24	$8
2007	$30	$12
2008	$32	$15

13. **Refer to Table 11-3.** The cost of the basket
    a. increased by $10 from 2006 to 2007.
    b. increased by $42 from 2006 to 2007.
    c. increased by $70 from 2006 to 2007.
    d. increased by $150 from 2006 to 2007.

14. **Refer to Table 11-3.** If 2006 is the base year, then the consumer price index was
    a. 100 in 2006, 135 in 2007, and 155 in 2008.
    b. 100 in 2006, 270 in 2007, and 310 in 2008.
    c. 200 in 2006, 135 in 2007, and 155 in 2008.
    d. 200 in 2006, 270 in 2007, and 310 in 2008.

15. The logic behind the catch-up effect is that
    a. workers in countries with low incomes will work more hours than workers in countries with high incomes.
    b. the capital stock in rich countries deteriorates at a higher rate because it already has a lot of capital.
    c. new capital adds more to production in a country that doesn't have much capital than in a country that already has much capital.
    d. None of the above is correct.

16. Fretonia and Libstien are the same except Fretonia has a larger capital stock. Both countries undertake policies that raise their saving rates to the same higher level. We would expect that
    a. both countries would have permanent increases in their growth rates, but the increase would initially be larger in Fretonia.
    b. both countries would have permanent increases in their growth rates, but the increase would initially be smaller in Fretonia.
    c. both countries would have temporary increases in their growth rates, but the increase would be larger in Fretonia.
    d. both countries would have temporary increases in their growth rates, but the increase would be smaller in Fretonia.

17. A certificate of indebtedness that specifies the obligations of the borrower to the holder is called a
    a. bond.
    b. stock.
    c. mutual fund.
    d. All of the above are correct.

18. Compared to short-term bonds, other things the same, long-term bonds generally have
    a. more risk and so they pay higher interest rates.
    b. less risk and so they pay lower interest rates.
    c. less risk and so they pay higher interest rates.
    d. about the same risk and so they pay about the same interest rate.

19. People who buy stock in a corporation such as General Electric become
    a. creditors of General Electric, so the benefits of holding the stock depend on General Electric's profits.
    b. creditors of General Electric, but the benefits of holding the stock do not depend on General Electric's profits.
    c. part owners of General Electric, so the benefits of holding the stock depend on General Electric's profits.
    d. part owners of General Electric, but the benefits of holding the stock do not depend on General Electric's profits.

20. What would happen in the market for loanable funds if the government were to increase the tax on interest income?
    a. Interest rates would rise.
    b. Interest rates would be unaffected.
    c. Interest rates would fall.
    d. The effect on the interest rate is uncertain.

21. James offers you \$1,000 today or \$$X$ in 7 years. If the interest rate is 4.5 percent, then you would prefer to take the \$1,000 today if and only if
    a. $X < 1{,}045.00$.
    b. $X < 1{,}188.89$.
    c. $X < 1{,}266.67$.
    d. $X < 1{,}360.86$.

22. For a risk averse person,
    a. the pleasure of winning \$1,000 on a bet exceeds the pain of losing \$1,000 on a bet.
    b. the pain of losing \$1,000 on a bet exceeds the pleasure of winning \$1,000 on a bet.
    c. the utility function exhibits the property of increasing marginal utility.
    d. the utility function gets steeper as wealth increases.

23. Tami knows that people in her family die young, and so she buys life insurance. Preston knows he is a reckless driver and so he applies for automobile insurance.
    a. These are both examples of adverse selection.
    b. These are both examples of moral hazard.
    c. The first example illustrates adverse selection, and the second illustrates moral hazard.
    d. The first example illustrates moral hazard, and the second illustrates adverse selection.

24. Robert put $15,000 into an account with a fixed interest rate two years ago and now the account balance is $16,695.38. What rate of interest did Robert earn?
    a. 4.5 percent
    b. 5.5 percent
    c. 6.5 percent
    d. 8.0 percent

25. Josh is a full-time college student who is not working or looking for a job. The Bureau of Labor Statistics counts Josh as
    a. unemployed and in the labor force.
    b. unemployed, but not in the labor force.
    c. in the labor force, but not unemployed.
    d. neither in the labor force nor unemployed.

26. Suppose there are a large number of men who used to work or seek work who now no longer do either. Other things the same, this makes
    a. the number of people unemployed rise but does not change the labor force.
    b. the number of people unemployed rise but makes the labor force fall.
    c. both the number of people unemployed and the labor force fall.
    d. the number of people unemployed fall but does not change the labor force.

27. At which risk-free interest rate is the present value of $35.00 two years from today equal to about $30.00 today?
    a. 5 percent
    b. 6 percent
    c. 7 percent
    d. 8 percent

28. If a bank has a reserve ratio of 8 percent, then
    a. government regulation requires the bank to use at least 8 percent of its deposits to make loans.
    b. the bank's ratio of loans to deposits is 8 percent.
    c. the bank keeps 8 percent of its deposits as reserves and loans out the rest.
    d. the bank keeps 8 percent of its assets as reserves and loans out the rest.

29. A bank has a 10 percent reserve requirement, $5,000 in deposits, and has loaned out all it can given the reserve requirement.
    a. It has $50 in reserves and $4,950 in loans.
    b. It has $500 in reserves and $4,500 in loans.
    c. It has $555 in reserves and $4,445 in loans.
    d. None of the above is correct.

30. If the reserve ratio is 20 percent, the money multiplier is
    a. 2.
    b. 4.
    c. 5.
    d. 8.

31. If the reserve ratio is 5 percent, then $2,500 of additional reserves can create up to
    a. $62,500 of new money.
    b. $50,000 of new money.
    c. $45,600 of new money.
    d. $37,500 of new money.

32. In 1991, the Federal Reserve lowered the reserve requirement from 12 percent to 10 percent. Other things the same this should have
    a. increased both the money multiplier and the money supply.
    b. decreased both the money multiplier and the money supply.
    c. increased the money multiplier and decreased the money supply.
    d. decreased the money multiplier and increased the money supply.

33. The federal funds rate is the
    a. percentage of face value that the Federal Reserve is willing to pay for Treasury Securities.
    b. percentage of deposits that banks must hold as reserves.
    c. interest rate at which the Federal Reserve makes short-term loans to banks.
    d. interest rate at which banks lend reserves to each other overnight.

34. The Fed increases the reserve requirement, but it wants to offset the effects on the money supply. Which of the following should it do?
    a. sell bonds to increase reserves
    b. sell bonds to decrease reserves
    c. buy bonds to increase reserves
    d. buy bonds to decrease reserves

35. When the Fed conducts open-market purchases,
    a. banks buy Treasury securities from Fed, which increases the money supply.
    b. banks buy Treasury securities from the Fed, which decreases the money supply.
    c. it buys Treasury securities, which increases the money supply.
    d. it buys Treasury securities, which decreases the money supply.

36. If the federal funds rate were above the level the Federal Reserve had targeted, the Fed could move the rate back towards its target by
    a. buying bonds. This buying would reduce reserves.
    b. buying bonds. This buying would increase reserves.
    c. selling bonds. This selling would reduce reserves.
    d. selling bonds. This selling would increase reserves.

37. When the Fed buys government bonds,
    a. the money supply increases and the federal funds rate increases.
    b. the money supply increases and the federal funds rate decreases.
    c. the money supply decreases and the federal funds rate increases.
    d. the money supply decreases and the federal funds rate decreases.

38. You hold bonds issued by the city of Sacramento, California. The interest you earn each year on these bonds
    a. is not subject to federal income tax and so these bonds pay a higher interest rate than otherwise comparable bonds issued by the U.S. government.
    b. is not subject to federal income tax and so these bonds pay a lower interest rate than otherwise comparable bonds issued by the U.S. government.
    c. is subject to federal income tax and so these bonds pay a higher interest rate than otherwise comparable bonds issued by the U.S. government.
    d. is subject to federal income tax and so these bonds pay a lower interest rate than otherwise comparable bonds issued by the U.S. government.

39. All or part of a firm's profits may be paid out to the firm's stockholders in the form of
    a. retained earnings.
    b. dividends.
    c. interest payments.
    d. capital accounts.

40. Assuming the risk-free interest rate is 6 percent, which of the following has the greatest present value?
    a. $300 paid in two years
    b. $150 paid in one year plus $140 paid in two years
    c. $100 paid today plus $100 paid in one year plus $100 paid in two years
    d. $285 today

Final Exam Part 2: Applications

1. i)The supply and demand for labor is given by

$$p^s = 10 + q$$

$$p^d = 190 - 2q$$

The wage is sticky at the current equilibrium. Compute the size of demand shock necessary to cause unemployment of 20 workers.

ii) Suppose now that the wage is somewhat flexible, but unions have negotiated that wages must be within 15 dollars of the current equilibrium level regardless of the economic conditions. The government has an unemployment insurance budget of $700, which is used to compensate workers at 50% of the current equilibrium wage if they should lose their jobs. What is the maximal demand shock that this program can handle such that no workers are without pay?

2. Suppose Iceland's production function is given by:

$$Y = AL^{1/3}K^{1/3}H^{1/3}$$

Where A is technology, L is labor, K is physical capital, and H is human capital.

i) Show that this production function exhibits constant returns to scale.

ii) What policies might the government of Iceland institute in order to increase human capital H?

iii) Suppose $A = 10$, physical capital per worker $\frac{K}{L} = 125$, and human capital per worker $\frac{H}{L} = 216$. The government has to decide between a program that will raise $\frac{K}{L}$ by 100 units and one that will raise $\frac{H}{L}$ by 100 units. Which program should they choose? Why?

3. Suppose Janice is risk-averse. You would like to make a bet with Janice based on the outcome of a coin flip. You know that Janice will not accept a 50-50 bet unless she is compensated at a 50% premium. For example she must be given at least \$150 for winning a gamble in which she stands a 50% chance to lose \$100. You propose the following bet. If the coin lands heads, Janice pays you \$500 today. If the coin lands tails, you will pay Janice \$1000 in three years. Compute the cutoff level that the risk-free interest rate must be below in order for Janice to accept this bet.

4. Consider two business projects. Project A requires an investment today of $10,000; and will pay off $5000 in two years, $5000 in 4 years, and $5000 in 6 years. Project B requires an investment today of $5000, and a subsequent investment of $5000 in one year; and will pay off $3000 in two years, $3000 in three years, and $10,000 in 4 years. The market risk-free interest rate is 5%.

   i) Compute the net present value of each project. Which one is more valuable?

   ii) Suppose the Federal Reserve would like to reduce the risk-free rate to 2%. Describe the process by which the Fed can accomplish this goal.

   iii) Suppose the Federal Reserve successfully lowers the risk-free rate to 2%. Which project is more valuable now?

5. Suppose First National Bank takes in $1000 in deposits, makes $950 in loans, and holds $50 in reserves.

i)Assuming that First National holds the minimum required reserves, what is the reserve requirement and money multiplier?

ii) Suppose the Fed would like to increase the money supply in the economy by $10,000. Should the Fed buy or sell government bonds to the public? What monetary value of bonds must the Fed buy/sell to accomplish its goal?

iii) Suppose the Fed prints the amount of currency necessary to complete the transaction you specified in part (ii). Suppose now that the Fed would instead like to increase the money supply by $20,000 without printing any additional currency. How can the Fed accomplish this goal?