Part 1.Multiple Choices (2pts each)

1. The demand for labor depends on ___ and ____ .
   A) the supply of labor; the marginal product of labor
   B) the supply of labor; the price of output produced.
   C) the rate of inflation; the price of the output produced
   D) the rate of inflation; the marginal product of labor
   E) the marginal product of labor; the price of output produced

Answer. E

2. The extra production gained by employing one more worker is called the:
   A) real wage. B) nominal wage C) marginal product D) surplus product E) opportunity cost

Answer. C

3. A long-term mismatch between the skills of some workers and the jobs available is a principal cause of ____ unemployment
   A) cyclical B) structural C) frictional
   Answer: B

4. Holding other factors constant, if the working age population increases as a result of a post-war baby boom year, then the real wage of workers will ____ and employment of workers will ____
   A) increase; increase B) decrease; decrease C) increase; decrease D) decrease; not change E) decrease; increase
   Answer: E

5. Fred and Norma just had a baby girl and want to make sure they save enough in the future to send her to college. This is an example of the ___ motive for saving.
   A) life-cycle B) demonstration effect C) public D) precautionary E) bequest
   Answer: A

6. If Alexandra deposits $1,000 from her checking account to pay her credit card balance, her wealth will be:
   A) increases by $1,000 B) decreases by $1,000 C) increases by $2,000
   D) decreases by $2,000 E) does not change.
   Answer: E

7. Which of the following is a stock?
   A) saving B) income C) capital D) consumption E) investment
   Answer: C

8. In an open-market purchase the Federal Reserve __ government bonds and the supply of bank reserves ___.
   A) buys; increases B) buys; decreases C) buys; does not change
   D) sells; increases E) sells; decreases
   Answer: A

9. In the long run, countries with higher rates of money growth usually have:
   A) higher rates of inflation B) lower rates of inflation C) faster growth rates of real output D) smaller budget deficits E) larger trade deficits
   Answer: A

10. Barter is:
   A) the direct trade of goods and services for other goods and services
   B) an asset used in purchasing goods and services
   C) the extension of credit to borrowers using funds raised from savers
   D) an equity claim to ownership
   E) a means of channeling funds from savers to borrowers with productive investment opportunities
   Answer: A

Part 2.Short Answers
I Employment
1. (2pts) The following information about a manufacturer is given.

Number of Workers	Total Output	Marginal Product
0	0	
1	35	35
2	68	33
3	99	31
4	128	29
5	155	27

Price of a product is $1,000.
Real wage for each worker is $32,000.

How many workers should the manufacturer employ?

Answer: First compute VMPL=Price times MPL. Hire 2 workers.

2.Labor demand and labor supply functions are given: w_{real}=14-Nd and w_{real}=2+Ns, where w_{real} is a real wage measure in today's dollar, Nd is the number of workers demanded and Ns is the number of workers supplied.

a. (2pts)What are the wage and employment in the labor market equilibrium?
   Answer: The equilibrium wage is $8 and employment is 6.

b. (4pts)Suppose the government imposed the minimum wage $10. How many workers are now employed? Are the employed workers better off or worse off? How many workers are unemployed? Show your work.

Answer: 4 workers are employed. They are better off because they receive minimum wage which is higher than the market equilibrium wage. Ns-Nd=8-4=4 workers are unemployed

3. Assume that union contract wage exceeds the market equilibrium wage. Suppose there is an increase in the labor supply.
a. (2pts)Does the number of unemployment increase or decrease? Justify your answer.

Answer: increase. (draw the diagram)

II. Saving and Capital Formation

1. (3pts)Based on the following information, find national saving, private saving, and public saving.
   GDP = 8,000
   Tax revenue = 1,500
   Government transfers and interest payments = 400
   Consumption expenditures = 5,000
   Government budget surplus = 100

Answer: Public saving = 100. T=Tax revenue – transfers and interest payments = 1,500-400= 1,100. G= 1100-100 =1,000. National Saving = 8,000-5,000-1,000=2,000
Private saving = 2,000-100= 1,900

2. Consider the saving and investment in the supply and demand diagram.
   a. (2pts)Draw the demand for saving and supply of saving. Label the vertical axis and horizontal axis carefully. What are the demand for saving and supply of saving?

      Answer: The vertical axis is real interest rate and the horizontal axis is saving and investment. Demand for saving is investment and supply of saving is national saving

   b. (2pts)Suppose technological improvement increased the marginal product of capital. Does this affect supply of saving or demand for saving? Also explain the effect.

      Answer: it will affect demand for saving (investment). The demand curve shifts to the right. The real interest rate goes up. Saving and demand will increase.

3. A firm is considering investment in a new machine. Machine costs $4,000. Machine will increase the firm's revenue by $1,000 per year. The firm takes loan from a bank. One year later, the firm will sell the machine and return the money to the bank. Real interest rate is 8%. Depreciation rate is 10%
   a. (1pt)What is the VMPK (value of marginal product of capital)?

Answer: $1,000

b. (2pts)What is the cost for acquiring the machine?

Answer: $4,000(0.08+0.1)=$720

c. (1pt) Should the firm obtain the machine?

Answer: VMPK> cost Invest in the machine

III. Money and the Fed

1. Suppose currency held by the public is $100million dollars, bank reserves are 50 million dollars, and the desired reserve-deposit ratio is 0.2.
   a. (2pts)What is the current money supply?

      Answer: Bank deposit = 50 million /0.2 = 250 million dollars.
      Money supply is 100 million + 250 million = 350 million dollars

   b. (3pts)Now holiday season is coming. People want to hold *extra* 30 million dollar currency for shopping, that is, people withdraw 30 million dollars from banks. What happens to bank reserves, bank deposits, and the money supply?

      Answer: People withdraw 30 million dollars from commercial banks. Currency held by the public is now 130 million dollars. The bank reserves are $20 million. Bank deposit = 20 million / 0.2 = 100 million dollars. Money supply is 130 million + 100 million = 230 million dollars.

2. (2pts)Banking panics during 1930-1933. What is an important factor for banking panics? What happened to money supply during the banking panics?

   Answer: The main factor is fractional reserve banking. Money supply decreased.

3. (2pts)Suppose real GDP is $8 trillion, nominal GDP is $ 12 trillion, M1 is $2 trillion, and M2 is $6 trillion. Find velocity for M1 and M2.

   Answer: For M1, $12 trillion / $2 trillion = 6. For M2, $12 trillion / $ 6 trillion = 2.