MULTIPLE CHOICE QUESTIONS
Choose the one alternative that best answers the question.
1. In terms of sizes, what are the correct orderings among GDP, consumption, and investment?
    a. GDP > consumption > investment
    b. Consumption > GDP > investment
    c. GDP > investment > consumption
    d. Investment > consumption > GDP
    e. None of the above.

2. Use the following information to answer this question. If nominal GDP rises from $100 trillion to $120 trillion, while the GDP deflator rises from 2.0 to 2.2, the percentage change in real GDP is approximately equal to:
    a. -10%
    b. 15%
    c. 9.1%
    d. 0%

3. In a given year, suppose a company spends $100 million on intermediate goods and $200 million on wages, with no other expenses. Also assume that its total sales are $800 million. The value added by this company equals:
    a. $200 million.
    b. $300 million.
    c. $500 million.
    d. $700 million.
    e. $800 million.

4. Select the alternative consisting of variables that can be negative.
    a. GDP, real interest rate, unemployment rate
    b. Real interest rate, net export, price level
    c. GDP growth rate, inflation, unemployment rate
    d. Inflation, net export, public saving
    e. None of the above.

5. Suppose that the government decides to engage in expansionary fiscal policy by increasing their spending while the central bank does not want to change its policy rate. Then, which of the following will happen in the short run?
    a. Consumption and investment increase in the short run.
    b. Consumption increases but investment decreases in the short run.
    c. Output increases by the amount that government spending increases.
    d. Consumption does not change, but investment increases less than government spending.
    e. None of the above.

6. Suppose there is a simultaneous Fed sale of bonds and increase in consumer confidence. We know with certainty that these two simultaneous events will cause:
   a. an increase in the nominal interest rate (i)
   b. a reduction in the nominal interest rate (i)
   c. an increase in output (Y)
   d. a reduction in output (Y)

7. If the price level today is 50, and the expected price level in the next year is 51. The nominal interest rate for one year from today is 1.5 percent. The real interest rate equals (or at least close to)
   a. -2 percent.
   b. -0.5 percent.
   c. 0 percent.
   d. 2 percent.

8. The risk premium usually increases when economic conditions in the near future become highly uncertain. Furthermore, consumers may also respond to such changes by lowering their autonomous consumption. Therefore, in an environment with high uncertainty, the central bank may want to
   a. lower the interest rate to shift the IS curve to the left.
   b. lower the interest rate to shift the IS curve to the right.
   c. raise the interest rate to shift the IS curve to the right.
   d. raise the interest rate to shift the LM curve upward.
   e. None of the above.

9. *(This part is not explicitly covered in lectures. Students can ignore this question.)* An increase in the required reserve ratio, θ, will cause:
   a. an increase in the monetary base (H)
   b. a reduction in H
   c. an increase in the money multiplier
   d. a reduction in the money multiplier
   e. none of the above

10. Consider a closed economy in the short run so that the price level is fixed. Suppose that taxes increase and money supply increases in such a way that output is constant in equilibrium (assume marginal propensity to consume <1). These policy changes will produce
    a. An increase in investment and an increase in private saving.
    b. An increase in investment and a decrease in government spending.
    c. An increase in investment and a decrease in consumption.
    d. A decrease in investment and an increase in public saving.
    e. Uncertain.

Q11. IS-LM

This question investigates the relationship between the marginal propensity to consume and the sensitivity of equilibrium output to a change in the central bank's policy rate.

  Consider the following equations:

$$C = 100 + c_1 Y_D$$

$$I = 150 + 0.4Y - 1000i$$

$$T = 100$$

$$G = 200$$

$$\bar{\imath} = 0.02$$

1) Derive the IS relation and express i in terms of Y.

2) Does the IS curve become flatter or steeper when the marginal propensity to consume increases? Explain your answer.

3) Consider two economies with different marginal propensities to consume, where other parameters are the same. Suppose that c_1 in the economy A is higher than that in the economy B. When the central banks in both countries engage in expansionary monetary policy and lower the interest rates by the same amount, in which country output will increase more? Explain graphically based on your answer to 2).

Q12. IS-LM

Use the following frame to draw the IS and LM curves.

1) Denote the initial output and interest rate with Y and i. Draw the IS and LM curves and label the equilibrium as point A.

The recession in the US in the early 1990s was in part due to growing consumer pessimism. People cut their consumption when they feel pessimistic about economic conditions that lie ahead. Here we we assume that autonomous consumption decreases.

2) Draw the new curve(s) and label the new equilibrium as point B. Explain whether consumption, investment, and output increase or decrease when the central bank does not change its policy rate.

3) Consider two scenarios. In Scenario 1, output returns to its initial level Y as the government raises G while the central bank does not change its policy rate. Scenario 2 is instead based on a new monetary policy, and output also returns to its initial level Y. Let C_1 and C_2 be consumption in Scenario 1 and 2, respectively. Determine whether C_1 is greater than, equal to, or less than C_2. Compare also investment, output, and interest rate. No explanation is required.

Q13: The Money Market

(This part is not explicitly covered in lectures. Students can ignore this question.)

Suppose the demand for money is given by $M^d = \$Y(1 - 5i)$.

The public holds 10% of the money in currency and the rest in checkable deposits. The required reserve ratio is 1/3. The commercial banks do not hold excess reserve.

Initially, the monetary base is $30 billion and the nominal income is $150 billion.

1) What is the demand for central bank money? Find the equilibrium interest rate.

Suppose people get worried about the possibility of bank runs and decide to hold 40% of money in the form of currency.

2) If the central bank keeps the monetary base unchanged, what will happen to the interest rate?

3) What measures can central bank take to keep the interest rate constant?

Q14: Bank Balance Sheet

(This part is not explicitly covered in lectures. Students can ignore this question.)

Consider the bank balance sheet shown below:

Bank Balance Sheet			
Reserve	20	Checkable Deposits	30
Short-term Government Bonds	20	Short-term debts (wholesale funding)	30
Long-term loans	40	Capital	20

The required reserve ratio by the central bank is 50%.

1) What is the capital ratio for this bank?

2) Suppose that the interest rate on government bonds is 5% and the expected rate of return on the long term loans is 10%, the interest rate on the short-term debts is 7%, what is the expected profit of the bank?

3) What is the expected profit per unit of capital of the bank?