1 Multiple Choice Questions

The exam begins on the next page.

MACROECONOMICS

SECTION I

Time—1 hour and 10 minutes

60 Questions

Directions: Each of the questions or incomplete statements below is followed by five suggested answers or completions. Select the one that is best in each case and then fill in the corresponding circle on the answer sheet.

1. If a banking system has ample reserves, which of the following is an action taken by the central bank that would cause a decrease in the cyclical rate of unemployment in the short run?

   (A) An increase in the required reserve ratio
   (B) An increase in the policy rate
   (C) An increase in the discount rate
   (D) A decrease in interest on reserves
   (E) A decrease in personal income tax rates

2. Which of the following describes the impact of an automatic stabilizer during an economic contraction?

   (A) As incomes rise, more individuals move up to higher income tax brackets, causing an automatic tax increase and reducing consumption.
   (B) As prices fall, workers accept lower wages, causing short-run aggregate supply to increase.
   (C) As unemployment falls, fewer individuals receive unemployment benefits, reducing consumption.
   (D) As unemployment rises, the government implements a tax decrease, stimulating consumption.
   (E) As unemployment rises, more individuals receive unemployment benefits, stimulating consumption.

3. If the expected inflation rate is 6%, the nominal interest rate is 2%, and the actual inflation rate is 4%, what is the actual real interest rate?

   (A) -4%
   (B) -2%
   (C) 2%
   (D) 4%
   (E) 6%

4. Assume that the country of Alpha has a balanced budget. If the government and central bank of Alpha implement expansionary fiscal and monetary policies in order to address a recession, what effect would these policies have in the short run on the government budget and interest rates?

	Government Budget	Interest Rates
(A)	Move toward deficit	Increase
(B)	Move toward deficit	Indeterminate
(C)	Remain in balance	Decrease
(D)	Move toward surplus	Decrease
(E)	Move toward surplus	Indeterminate

5. If the money supply is \$40,000, consumer spending is \$30,000, and nominal output is \$50,000, what is the velocity of money according to the quantity theory of money?

   (A) 0.6
   (B) 0.75
   (C) 0.8
   (D) 1.25
   (E) 1.67

6. What will be the short-run effect of a reduction in business regulations on real output and the price level?

	Real Output	Price Level
(A)	Increase	No change
(B)	Increase	Decrease
(C)	Decrease	Increase
(D)	Decrease	Decrease
(E)	No change	Decrease

7. Which account includes both net exports and net unilateral transfers?

   (A) The money market account
   (B) The trade balance account
   (C) The capital and financial account
   (D) The foreign investment account
   (E) The current account

8. Assume an open economy has a balanced budget and a balanced capital and financial account (CFA). Which of the following independently occurring changes in the country's budget and CFA will have the largest positive effect on its long-run economic growth rate?

	Change in the Budget	Change in the CFA
(A)	Move into deficit	Move into deficit
(B)	Move into deficit	Move into surplus
(C)	Move into surplus	Move into deficit
(D)	Move into surplus	No change
(E)	Move into surplus	Move into surplus

9. Assume that Country S has an open economy and a flexible exchange rate. How will an increase in borrowing in Country S affect its real interest rate, and what will be the resulting effect on the value of Country S's currency in foreign exchange markets?

	Real Interest Rate	Currency Value
(A)	Increase	Appreciate
(B)	Increase	Depreciate
(C)	No change	No change
(D)	Decrease	Appreciate
(E)	Decrease	Depreciate

10. How is long-run economic growth demonstrated in the aggregate demand–aggregate supply model?

    (A) A rightward shift in the short-run aggregate supply curve
    (B) A leftward shift in the long-run aggregate supply curve
    (C) A rightward shift in the long-run aggregate supply curve
    (D) A rightward shift in the aggregate demand curve
    (E) A leftward shift in the aggregate demand curve

11. Assume the base year is 2000. If the consumer price index in 2014 was 125, it can be concluded that a typical market basket of goods in 2014 cost

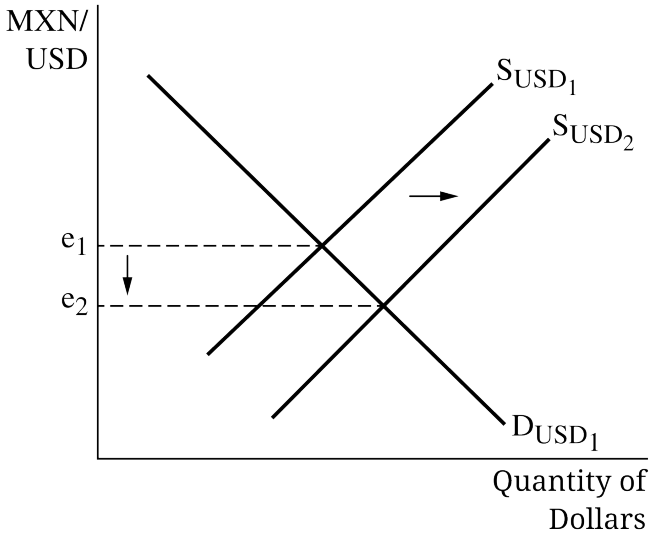
    (A) 125 percent more than the same basket bought in the base year
    (B) 125 percent more than the same basket bought in 2013
    (C) 25 percent less than the same basket bought in the base year
    (D) 25 percent more than the same basket bought in 2013
    (E) 25 percent more than the same basket bought in the base year

12. Which of the following statements best describes the long-run aggregate supply curve?

    (A) It is vertical because wages and input prices are fixed in the long run.
    (B) It is vertical because wages and input prices are fully flexible in the long run.
    (C) It is vertical because potential output is determined by a country's central bank.
    (D) It is upward sloping because wages and input prices are fixed in the long run.
    (E) It is upward sloping because savings increase as interest rates rise.

13. Which of the following transactions would be counted as investment spending in the calculation of a nation's gross domestic product?

    (A) Robert buys 100 shares of stock in an energy company.
    (B) Ming purchases a new delivery truck for her bakery business.
    (C) Latasha pays a mechanic to repair her personal car.
    (D) Sam earns interest on Canadian government bonds.
    (E) Taylor receives unemployment benefits when he loses his job.



14. The currency of the United States is the United States dollar (USD), and the currency of Mexico is the Mexican peso (MXN). The United States and Mexico are trading partners with flexible exchange rate systems. The graph provided shows the market for the United States dollar. Which of the following events would cause the shift in the supply of dollars from to shown in the graph?

    (A) Americans increase their demand for vacations in Mexico.
    (B) Mexicans increase their demand for vacations in the United States.
    (C) The United States increases its exports of electronic goods to Mexico.
    (D) Real income in Mexico increases.
    (E) The price level in the United States decreases.

Year	Nominal Gross Domestic Product (GDP)	GDP Deflator
2019	$4,000	100
2020	$5,000	125

15. Based on the data provided in the table, which of the following conclusions can be drawn for the period 2019 to 2020?

    (A) Nominal GDP increased by 40%.
    (B) Nominal GDP increased by 20%.
    (C) Real GDP increased by 25%.
    (D) Real GDP did not change.
    (E) The inflation rate was 20%.

16. The economy of Country X is experiencing demand-pull inflation as a result of an increase in consumer spending. If the government and central bank of Country X want to reduce inflation and the banking system of Country X has ample reserves, which of the following combinations of fiscal and monetary policy would be most effective to achieve their goal in the short run?

	Fiscal Policy Action	Monetary Policy Action
(A)	Decrease government spending	Increase administered interest rates
(B)	Decrease government spending	Decrease administered interest rates
(C)	Increase income taxes	Decrease administered interest rates
(D)	Decrease income taxes	Increase administered interest rates
(E)	Increase transfer payments	Increase administered interest rates

17. Suppose the marginal propensity to consume is 0.8. If government spending increases by $15 million and personal income taxes increase by $20 million, what will be the maximum possible change in aggregate demand in the short run?

(A) A decrease of $5 million
(B) An increase of $5 million
(C) A decrease of $15 million
(D) An increase of $15 million
(E) A decrease of $20 million

18. If a government decides to implement an expansionary fiscal policy, what is most likely to happen to the price level and the unemployment rate in the short run if there is no crowding out?

	Price Level	Unemployment Rate
(A)	Increase	Increase
(B)	Increase	Remain the same
(C)	Increase	Decrease
(D)	Decrease	Increase
(E)	Decrease	Decrease

19. If France has a comparative advantage in the production of grapes, and Italy has an absolute advantage in the production of olives, which of the following statements must be true?

(A) France and Italy will not benefit from trading with each other.
(B) France can produce more olives than Italy can.
(C) France can produce more grapes than Italy can.
(D) France has a lower opportunity cost in producing grapes than Italy does.
(E) France has a higher opportunity cost in producing grapes than Italy does.

20. What is the fundamental problem that economics attempts to address?

(A) Determining the appropriate level of government spending in an economy
(B) How to maintain full employment output
(C) How to fulfill unlimited wants with limited resources
(D) What policies will stimulate the most economic growth
(E) Whether or not to restrict international trade to achieve more favorable terms of trade

21. How will an increase in government spending with no crowding out affect real output and the price level in the short run?

	Real Output	Price Level
(A)	Decrease	Increase
(B)	Increase	Decrease
(C)	Increase	Increase
(D)	No change	Increase
(E)	No change	No change

22. Which of the following best represents an investment in human capital?

(A) A clothing manufacturer purchases automated machinery.
(B) An automobile manufacturer hires an engineer who specializes in maintaining modern robotic assembly machines.
(C) A bank pays the tuition for one of its managers to pursue a degree in business administration.
(D) A paper mill offers a bonus to an employee who develops a more efficient way to incentivize workers to work more night shifts.
(E) A manufacturing firm builds a new assembly line.

23. Which of the following describes the effect of an increase in a government's budget deficit on the real interest rate and private investment?

	Real Interest Rate	Private Investment
(A)	Increase	Decrease
(B)	Increase	Increase
(C)	Decrease	Decrease
(D)	Decrease	Increase
(E)	Indeterminate	Indeterminate

24. When the government invests in education and physical capital, which of the following will happen in the long run?

(A) Real output per worker will decrease.
(B) There will be upward movement along the aggregate production function.
(C) There will be downward movement along the aggregate production function.
(D) The aggregate production function will shift upward.
(E) The aggregate production function will shift downward.

25. If the inflation rate increases, what will happen to the real interest rate on existing loans with fixed nominal interest rates?

(A) It will increase.
(B) It will decrease.
(C) It will stay the same.
(D) It will be greater than the nominal interest rate.
(E) It will equal the unexpected inflation rate minus the expected inflation rate.

26. Assume that a nation's capital and financial account is in balance. If the nation's central bank implements contractionary monetary policy, which of the following will occur solely as a result of the change in the nation's interest rates?

(A) There will be an increase in financial capital outflows.
(B) The balance of payments will be greater than zero.
(C) Both the current account and the capital and financial account will move into deficit.
(D) International investors will buy less of the nation's financial assets.
(E) The capital and financial account will move into surplus.

27. After a fixed-rate loan is repaid, the borrower's financial position will have improved if

(A) the inflation rate was higher than expected
(B) nominal interest rates increased
(C) real interest rates increased
(D) financial capital outflow increased
(E) the money supply decreased

28. If the number of people that are employed is 140 million, the number of people that are unemployed is 20 million, and the civilian, noninstitutional population aged 16 and over is 200 million, then the labor force participation rate is

(A) 10.0%
(B) 12.5%
(C) 60.0%
(D) 70.0%
(E) 80.0%

29. Which statement best describes the law of demand?

(A) When price increases, demand decreases.
(B) When price increases, demand increases.
(C) Price and quantity demanded are inversely related.
(D) Price and quantity demanded are directly related.
(E) The demand curve is always upward sloping.

30. According to the law of supply, which of the following is true as the price of a good or service decreases?

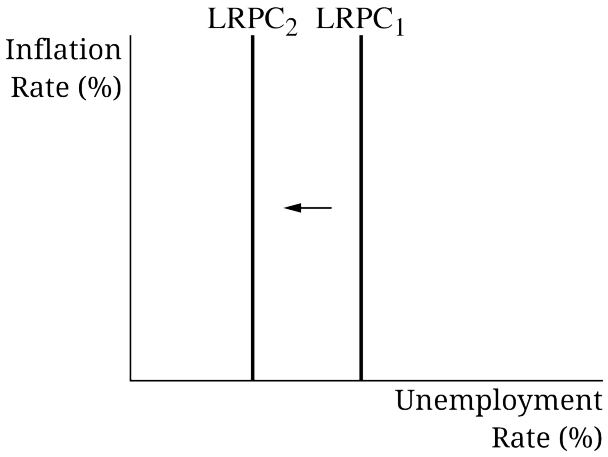
(A) Producers are willing and able to sell more so they increase their sales.
(B) Producers are willing and able to sell less because their production costs increase.
(C) Producers are willing and able to sell less because their profits decrease.
(D) Consumers are willing and able to buy more because they will switch from more expensive goods.
(E) Consumers are willing and able to buy more because they will be able to afford a greater quantity.

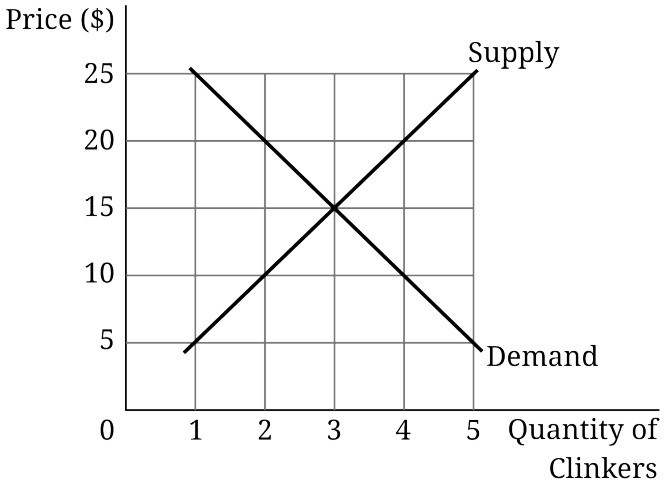
31. Assume that a country has limited reserves in its banking system. Which of the following would lead to inflation in the long run according to the quantity theory of money?

(A) Sustained purchases of government bonds by the central bank
(B) Commercial banks holding more reserves
(C) Consumers spending more money as their confidence grows
(D) An increase in the federal budget surplus
(E) Business taxes decreasing and firms spending more money on capital improvements

32. If an economy is currently experiencing a decrease in the price level and the banking system has limited reserves, which of the following monetary policy actions can be implemented to reverse the change in the price level in the short run?

(A) Increasing the required reserve ratio
(B) Increasing the policy rate
(C) Increasing government spending
(D) Selling bonds on the open market
(E) Buying bonds on the open market





33. Using the graph provided of the long-run Phillips curve (LRPC), which of the following could cause the change from $LRPC_1$ to $LRPC_2$2?

    (A) An increase in the price of natural resources
    (B) An increase in government spending
    (C) An increase in the central bank's administered interest rates
    (D) A decrease in unemployment insurance benefits
    (E) A decrease in net exports

34. Assuming the marginal propensity to consume is less than 1, which of the following describes why the magnitude of the tax multiplier is smaller than the magnitude of the expenditure multiplier?

    (A) Changes in income taxes initially affect both household consumption and household savings.
    (B) Changes in income taxes initially affect household savings only.
    (C) Changes in income taxes initially affect net investment instead of consumption.
    (D) Changes in income taxes initially affect exports only.
    (E) Changes in income taxes initially affect firms only.

35. Based on the provided graph of the market for clinkers, which of the following statements is true if the current price in the market for clinkers is $20?

    (A) There is a shortage of 2 clinkers.
    (B) There is a surplus of 2 clinkers.
    (C) The market is in equilibrium.
    (D) The demand for clinkers will decrease.
    (E) The supply of clinkers will increase.

36. A change in which of the following best measures economic growth?

    (A) Nominal gross domestic product per capita
    (B) Real gross domestic product per capita
    (C) Government spending per capita
    (D) Private-sector spending per capita
    (E) Bond purchases per capita

37. Without any policy interventions, the country of Myto has automatically returned to long-run equilibrium after experiencing a recessionary gap. Which of the following conditions must have existed for this self-adjustment to long-run equilibrium to occur?

    (A) Trade unions were strengthened, providing more income for their members.
    (B) Industrial investment increased, which increased stock prices.
    (C) Nominal wages decreased as workers accepted cuts in their earnings.
    (D) The central bank added to its portfolio by purchasing bonds on the open market.
    (E) Wages and prices were sticky at levels of output less than full employment.

38. Assume the banking system in Nation K has limited reserves. Which of the following would most likely lead to a decrease in nominal interest rates in Nation K?

(A) The central bank in Nation K buys government securities.

(B) The central bank in Nation K increases the required reserve ratio.

(C) The government of Nation K decreases income taxes.

(D) The government of Nation K increases unemployment benefits.

(E) The government of Nation K increases spending.

39. The nation of Newland has a flexible exchange rate and an open economy. The government of Newland has decided to increase income taxes. Based solely on the effect of the increase in income taxes on Newland's real output, what will happen to Newland's net exports and how will the change in Newland's net exports affect the value of its currency in the short run?

	Net Exports	Value of Newland's Currency
(A)	Increase	Appreciate
(B)	Increase	Depreciate
(C)	Increase	Will not change
(D)	Decrease	Appreciate
(E)	Decrease	Depreciate

40. What is the opportunity cost of keeping cash at home?

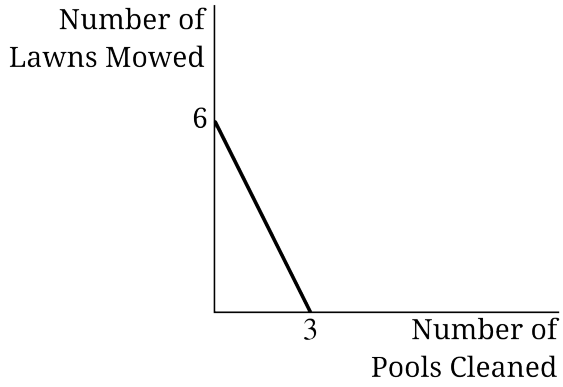
(A) The ability to make purchases quickly

(B) The growth in the real value of the money that occurs during inflationary periods

(C) The lost income from a zero-interest savings account at the bank

(D) The lost income from not investing the money in an interest-bearing financial asset

(E) The increased risk of losing the money in an economic downturn



41. Peter runs a small business mowing lawns and cleaning pools. The production possibilities curve provided shows the combinations of lawns mowed and/or pools cleaned that Peter can complete in a day. Which of the following is true concerning Peter's production possibilities curve?

(A) Peter can mow more than 6 lawns if he doesn't clean any pools that day.

(B) Peter's opportunity cost of mowing 1 lawn is $\frac{1}{2}$ of a pool cleaned.

(C) Peter's opportunity cost of cleaning 1 pool is $\frac{1}{2}$ of a lawn mowed.

(D) Peter experiences increasing opportunity costs in cleaning pools.

(E) Peter experiences increasing opportunity costs in mowing lawns.

42. What is definitely true in the short run about the economy if real output begins to increase again after months of decline?

(A) The economy is falling into recession.

(B) The economy is exiting a business cycle trough.

(C) The price level is decreasing.

(D) The unemployment rate is increasing.

(E) The purchasing power of nominal wages is increasing.

43. Which of the following is the best example of a policy action that will increase the rate of long-run economic growth?

(A) Increasing unemployment benefits
(B) Increasing investment in energy-efficient technologies
(C) Increasing subsidies to consumers for spending on nondurable goods
(D) Decreasing personal income tax rates
(E) Decreasing spending on early childhood education

44. Which of the following could have caused the national debt to change from $12 trillion to $15 trillion?

(A) A household debt increase of $3 trillion
(B) A government budget deficit of $3 trillion
(C) A government budget surplus of $3 trillion
(D) A decrease of $3 trillion in financial capital inflows
(E) An increase of $3 trillion in business debt

45. Which of the following will increase physical capital formation in an economy in the long run?

(A) A decrease in financial capital inflows
(B) A decrease in frictional unemployment
(C) An increase in unemployment benefits
(D) An increase in interest rates
(E) An increase in total savings

46. Which of the following would explain an increase in the price level and a decrease in real GDP in the short run?

(A) Workers successfully negotiated for higher wages.
(B) Consumers decreased their spending.
(C) The government decreased corporate taxes.
(D) The government decreased business regulations.
(E) Firms increased their investment spending.

47. What is the relationship between the price of previously issued bonds and the prevailing market interest rate?

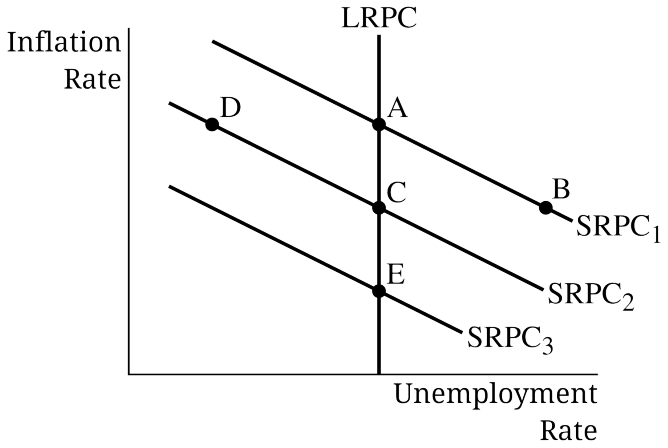
(A) The price of previously issued bonds is directly related to the prevailing market interest rate.
(B) The price of previously issued bonds is unrelated to the prevailing market interest rate.
(C) The price of previously issued bonds is inversely related to the prevailing market interest rate.
(D) The price of previously issued bonds is equal to the prevailing market interest rate.
(E) The price of previously issued bonds is less than the prevailing market interest rate.

48. In what way is the GDP deflator similar to the consumer price index?

(A) Both can be used to adjust nominal values to real values.
(B) Both use select market baskets of goods and services to measure changes in the price level.
(C) Both measure only the change in prices of domestically produced goods and services.
(D) Both measure the potential output of an economy.
(E) Both increase as the unemployment rate increases.

49. Assume an economy is in long-run equilibrium. If there is an increase in short-run aggregate supply, how will it be demonstrated in the Phillips curve model?

(A) A movement along the short-run Phillips curve to the left of long-run equilibrium
(B) A movement along the short-run Phillips curve to the right of long-run equilibrium
(C) A shift of the short-run Phillips curve to the left
(D) A shift of the short-run Phillips curve to the right
(E) A shift of the long-run Phillips curve to the right



50. Assume the economy is initially in long-run equilibrium. Which of the following describes how the short-run effect of an increase in personal income taxes would be depicted in the Phillips curve model provided?

(A) A movement along $SRPC_1$ from point A to point B

(B) A movement along $SRPC_2$ from point C to point D

(C) A movement along LRPC from point C to point E

(D) A shift from $SRPC_2$ to $SRPC_3$

(E) A shift from $SRPC_3$ to $SRPC_2$

51. Suppose the country of Stalia is currently experiencing a recession, and in response, the central bank carries out expansionary monetary policy. As a result, what will happen to its natural rate of unemployment in the short run?

(A) It will increase as frictional unemployment increases.

(B) It will increase as structural unemployment decreases.

(C) It will decrease as cyclical unemployment increases.

(D) It will decrease as structural and cyclical unemployment decrease.

(E) It will remain the same as cyclical unemployment decreases.

Disposable Income	Consumption
\$40,000	\$30,000
\$50,000	\$37,500
\$60,000	\$45,000
\$70,000	\$52,500

52. Based on the information in the table provided, what is the value of the tax multiplier?

(A) -0.25

(B) -0.75

(C) -3

(D) -4

(E) -5

53. Why is the unemployment rate an imperfect measure of joblessness?

(A) It includes workers who are on strike.

(B) It counts discouraged workers.

(C) It excludes the frictionally unemployed.

(D) It does not include the number of underemployed workers.

(E) It overestimates the number of individuals who are self-employed.

54. The United States and the Eurozone are trading partners with flexible exchange rates, and the United States has a capital and financial account surplus. If Europeans reduce their demand for United States financial assets, which of the following will occur?

(A) The natural rate of unemployment in the United States will decrease.

(B) United States imports from Europe will increase.

(C) The United States current account will move toward surplus.

(D) The United States capital and financial account surplus will increase.

(E) United States exports to Europe will decrease.

55. Wayland and Hytop are countries that trade with each other and have flexible exchange rates. Which of the following groups will benefit if Wayland's currency depreciates relative to Hytop's currency in the short run?

(A) Exporters in Hytop and importers in Hytop
(B) Exporters in Hytop and importers in Wayland
(C) Exporters in Hytop and exporters in Wayland
(D) Importers in Hytop and importers in Wayland
(E) Importers in Hytop and exporters in Wayland

56. The monetary base includes which of the following?

(A) Mutual funds in retirement portfolios
(B) Savings accounts
(C) Currency in circulation
(D) Credit cards
(E) Outstanding mortgage balances

57. GDP is an imperfect measure of a nation's economic performance because it does not account for which of the following?

(A) Purchases made by the nation's government
(B) Purchases of domestically produced goods by international consumers
(C) Purchases of internationally produced goods by domestic consumers
(D) Goods produced at home for personal consumption
(E) Personal consumption expenditures on durable goods

58. Which of the following explains why firms choose to produce more output in the short run as the price level increases?

(A) Flexible input prices
(B) Improved technology
(C) Decreased subsidies
(D) Sticky nominal wages
(E) Increased purchasing power

59. In the country of Zeta, which of the following will cause aggregate demand to increase?

(A) The price of oil, a key productive resource in Zeta, increases.
(B) Zeta's government increases regulations on businesses.
(C) The aggregate price level in Zeta decreases.
(D) Zeta's government increases spending.
(E) A large number of firms in Zeta adopt a new production technology.

60. Assume that a banking system has limited reserves and the required reserve ratio is 0.25. If an individual deposits $1,000 cash into a checking account, what is the immediate effect on the M1 measure of the money supply and the maximum possible change in the M1 measure of the money supply?

	Immediate Effect on M1	Maximum Possible Change in M1
(A)	No change	$1,000 increase
(B)	No change	$3,000 increase
(C)	No change	$4,000 increase
(D)	$1,000 increase	$3,000 increase
(E)	$1,000 increase	$4,000 increase

STOP
END OF SECTION I

2 Free-Response Questions

Section II begins on the next page.

MACROECONOMICS

SECTION II

Total Time—1 hour

Reading Period—10 minutes

Writing Period—50 minutes

3 Questions

Directions: : You are advised to spend the first 10 minutes reading all of the questions and planning your answers. You will then have 50 minutes to answer all three of the following questions. You may begin writing your responses before the reading period is over. **It is suggested that you spend approximately half your time on the first question and divide the remaining time equally between the next two questions.** Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer. Use a pen with black or dark blue ink.

You may plan your answers in this orange booklet, but no credit will be given for anything written in this booklet. **You will only earn credit for what you write in the separate Free Response booklet.**

1. The economy of Shaunland is in long-run equilibrium.

   (a) Draw a correctly labeled graph of the aggregate demand, short-run aggregate supply, and long-run aggregate supply curves, and show each of the following.

      i. The current equilibrium real output and price level, labeled Y_1 and PL_1, respectively.

      ii. The full-employment output, labeled Y_F.

   (b) Assume that the price of steel increases and Shaunland relies heavily on steel in domestic production. On your graph in part (a), show the short-run effect of the increase in steel prices on the equilibrium real output, labeled Y_2, and the equilibrium price level, labeled PL_2.

   (c) As a result of the increase in the price of steel, is Shaunland experiencing cost-push inflation, demand-pull inflation, or deflation? Explain.

   (d) Assume no policy action is taken to restore full employment. Based on your answer to part (c), explain how the economy will adjust in the long run.

   (e) Assume instead of waiting for the long-run adjustment process, the central bank of Shaunland is considering implementing monetary policy to offset the effect of the increase in steel prices on the price level. The banking system in Shaunland has limited reserves. Identify the appropriate open-market operation that the central bank of Shaunland would implement.

   (f) Draw a correctly labeled graph of the money market in Shaunland and show the effect of the open-market operation identified in part (e) on the equilibrium nominal interest rate.

   (g) Based on the change in the nominal interest rate shown on your graph in part (f), what will happen to each of the following?

      i. Shaunland's actual unemployment rate in the short run. Explain.

      ii. Shaunland's international financial capital flows.

2. The economy of the United States is currently operating below full employment.

   (a) Assume the government wants to increase aggregate demand by $200 billion and the marginal propensity to consume is 0.8.

      i. Calculate the minimum change and state the direction of change in government spending required to increase aggregate demand by $200 billion. Show your work.

      ii. Suppose instead the government chooses to change income taxes in order to increase aggregate demand. Calculate the minimum change and state the direction of change in income taxes required to increase aggregate demand by $200 billion. Show your work.

   (b) Show your work.

   (c) The currency of the United States is the dollar (USD) and the currency of Japan is the yen (JPY). Draw a correctly labeled graph of the foreign exchange market for the dollar and show the effect of the change in net exports identified in part (b) on the international value of the dollar.

3. The table provided shows macroeconomic data for the economy of Liang Island in 2020. The GDP deflator was 150 in 2020.

Macroeconomic Variables	**Value (in millions)**
Personal Consumption Expenditures	$70
Government Spending	$25
Gross Private Domestic Investment	$10
Personal Income	$90
Exports	$20
Imports	$5
Population	5

(a) Calculate the nominal gross domestic product (GDP) in 2020. Show your work.

(b) Based on your answer to part (a), calculate the real GDP in 2020. Show your work.

(c) Explain the conceptual difference between nominal GDP and real GDP.

(d) Assume real GDP in 2019 was $120 million and the population of Liang Island did not change from 2019 to 2020. Based on your answer to part (b), did the economy of Liang Island experience economic growth in per capita terms in 2020? Explain using numbers.

(e) What is one specific fiscal policy action the government of Liang Island can take to promote long-run economic growth? Explain.

STOP
END OF EXAM

1-5	DEBBD
6-10	BEEAC
11-15	EBBAD
16-20	AACDC
21-25	CCADB
26-30	EAECC
31-35	AEDAB
36-40	BCAAD
41-45	BBBBE
46-50	ACACA
51-55	ECDCE
56-60	CDDDB

MACROECONOMICS

SECTION II

Total Time—1 hour

Reading Period—10 minutes

Writing Period—50 minutes

3 Questions

Directions: : You are advised to spend the first 10 minutes reading all of the questions and planning your answers. You will then have 50 minutes to answer all three of the following questions. You may begin writing your responses before the reading period is over. **It is suggested that you spend approximately half your time on the first question and divide the remaining time equally between the next two questions.** Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer. Use a pen with black or dark blue ink.

You may plan your answers in this orange booklet, but no credit will be given for anything written in this booklet. **You will only earn credit for what you write in the separate Free Response booklet.**

1. The economy of Shaunland is in long-run equilibrium.

   (a) Draw a correctly labeled graph of the aggregate demand, short-run aggregate supply, and long-run aggregate supply curves, and show each of the following.

      i. The current equilibrium real output and price level, labeled Y_1 and PL_1, respectively.

      ii. The full-employment output, labeled Y_F.

   (b) Assume that the price of steel increases and Shaunland relies heavily on steel in domestic production. On your graph in part (a), show the short-run effect of the increase in steel prices on the equilibrium real output, labeled Y_2, and the equilibrium price level, labeled PL_2.

   (c) As a result of the increase in the price of steel, is Shaunland experiencing cost-push inflation, demand-pull inflation, or deflation? Explain.

   (d) Assume no policy action is taken to restore full employment. Based on your answer to part (c), explain how the economy will adjust in the long run.

   (e) Assume instead of waiting for the long-run adjustment process, the central bank of Shaunland is considering implementing monetary policy to offset the effect of the increase in steel prices on the price level. The banking system in Shaunland has limited reserves. Identify the appropriate open-market operation that the central bank of Shaunland would implement.

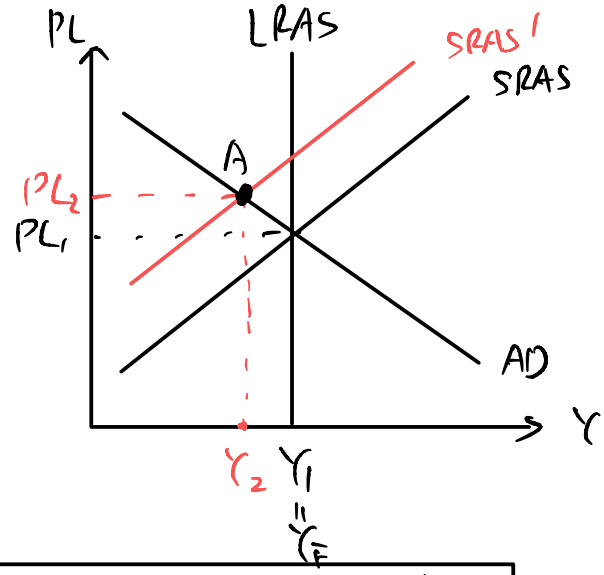
   (f) Draw a correctly labeled graph of the money market in Shaunland and show the effect of the open-market operation identified in part (e) on the equilibrium nominal interest rate.

   (g) Based on the change in the nominal interest rate shown on your graph in part (f), what will happen to each of the following?

      i. Shaunland's actual unemployment rate in the short run. Explain.

      ii. Shaunland's international financial capital flows.

(a)



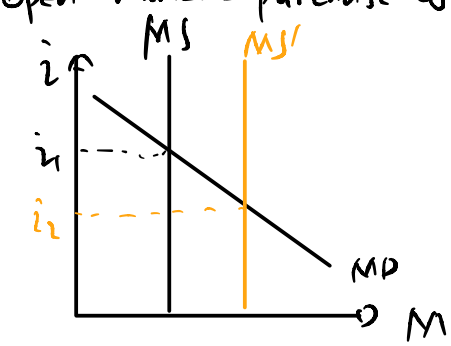
(b): When input cost increase, SRAS will shift to the left.

(c) Shaunland is experiencing cost-push inflation, because the price increase is caused by the increased price of steel, an important input of domestic production.

(d) It's depends on the increase of steel is either temporary or permanent. If the change is temporary, then SRAS will move back to the origional level because recessionary gap will increase the unemployment level and push the wage decrease. If the change is permanent, then LRAS will move left until 均衡 at A, as the input shortage is continuing.

e): open-market purchase of bonds

f):



(g) i: decrease. Expansionary Monetary policy will shift AD curve to the right to close the recessionary gap. More goods are produced will lead social labour demand increase to reduce the number of unemployed worker.

ii: debit / deficit.

2. The economy of the United States is currently operating below full employment.

MPC = 0.8

(a) Assume the government wants to increase aggregate demand by $200 billion and the marginal propensity to consume is 0.8.

   i. Calculate the minimum change and state the direction of change in government spending required to increase aggregate demand by $200 billion. Show your work.

   ii. Suppose instead the government chooses to change income taxes in order to increase aggregate demand. Calculate the minimum change and state the direction of change in income taxes required to increase aggregate demand by $200 billion. Show your work.

(b) Show your work.

(c) The currency of the United States is the dollar (USD) and the currency of Japan is the yen (JPY). Draw a correctly labeled graph of the foreign exchange market for the dollar and show the effect of the change in net exports identified in part (b) on the international value of the dollar.

(a): i $G * \left(\frac{1}{1-MPC}\right) = 200$

$G * 5 = 200$

$G = 40$, increase government spending by 40.

ii $T * \left(\frac{MPC}{1-MPC}\right) = 200$

$4 * T = 200$

$T = 50$, decrease Tax by 50.

(b). 未知

(c) 无 part B.

3. The table provided shows macroeconomic data for the economy of Liang Island in 2020. The GDP deflator was 150 in 2020.

Macroeconomic Variables	Value (in millions)	
Personal Consumption Expenditures	$70	C
Government Spending	$25	G
Gross Private Domestic Investment	$10	I
Personal Income	$90	
Exports	$20	NX = 5
Imports	$5	
Population	5	

(a) Calculate the nominal gross domestic product (GDP) in 2020. Show your work.

(b) Based on your answer to part (a), calculate the real GDP in 2020. Show your work.

(c) Explain the conceptual difference between nominal GDP and real GDP.

(d) Assume real GDP in 2019 was $120 million and the population of Liang Island did not change from 2019 to 2020. Based on your answer to part (b), did the economy of Liang Island experience economic growth in per capita terms in 2020? Explain using numbers.

(e) What is one specific fiscal policy action the government of Liang Island can take to promote long-run economic growth? Explain.

(a) $Y = C + I + G + NX = 70 + 25 + 10 + 15 = 120$

(b) $\text{GDP def} = \frac{\text{NGDP}}{\text{RGDP}} * 100$

$150 = \frac{120}{\text{RGDP}} * 100$

$\text{RGDP} = \frac{120}{1.5} = 80$

(c) NGDP is the market value of all final good and service produced in a given time period domestically

RGDP is NGDP deflated with price change

(d) 2019: $\frac{\text{RGDP}}{\text{Pop}} = \frac{120}{5}$ 2020: $\frac{\text{RGDP}}{\text{Pop}} = \frac{80}{5}$

$\Rightarrow$ decrease.

(e) Increase government spending on education. This will improve Liang Island's Human capital level, and improve the productivity of labour in the long run.

STOP

END OF EXAM