

I. Multiple Choice

1. Which of the following is the best definition of Gross Domestic Product?
 - A) The total market value of all goods and services — final and intermediate — produced by a country's citizens regardless of location
 - B) The total market value of all final goods and services produced within a country's borders
 - C) The total income earned by a country's residents from all sources, domestic and foreign
 - D) The total spending by households, firms, and governments on goods produced anywhere
2. Which of the following is counted in U.S. GDP?
 - A) A U.S. citizen working for a company in Germany
 - B) A Canadian-owned factory producing goods in Texas
 - C) The purchase of 100 shares of Apple stock
 - D) Steel purchased by an automaker to build cars
3. Which of the following transactions would NOT be included in GDP?
 - A) A household purchases a newly built home
 - B) A city government pays contractors to repair a bridge
 - C) A retiree receives a monthly Social Security check
 - D) A restaurant purchases food ingredients and sells meals to customers
4. Which of the following is the correct formula for GDP using the expenditure approach?
 - A) $GDP = C + I + G + NX$
 - B) $GDP = C + I + T + NX$
 - C) $GDP = W + R + I + P$
 - D) $GDP = C + S + G + NX$
5. A country has a nominal GDP of \$500 billion and a GDP deflator of 125. What is its real GDP?
 - A) \$625 billion
 - B) \$500 billion
 - C) \$400 billion
 - D) \$375 billion
6. Which of the following best explains why nominal GDP may rise even when an economy's actual output has not increased?
 - A) The labor force has grown faster than the working-age population
 - B) The overall price level has risen, inflating the dollar value of output
 - C) Imports have decreased, raising the value of net exports
 - D) Investment spending has shifted from capital goods to consumer goods
7. Which of the following is included in the Investment (I) component of GDP?
 - A) A household purchases \$10,000 worth of corporate bonds
 - B) A firm increases its inventory of unsold goods

- C) The federal government buys new military aircraft
 - D) A consumer purchases a 10-year-old house from another family
8. Which of the following would be classified as an injection in the circular flow model?
- A) Household saving
 - B) Taxes paid to the government
 - C) Imports purchased from abroad
 - D) Government spending on public infrastructure
9. In the four-sector circular flow model, which of the following represents a leakage from the domestic economy?
- A) Exports
 - B) Business investment
 - C) Government spending
 - D) Imports
10. A foreign-owned automobile company opens a manufacturing plant in the United States. Which of the following correctly describes how this affects GDP and GNP?
- A) U.S. GDP increases; U.S. GNP increases
 - B) U.S. GDP increases; U.S. GNP is unchanged
 - C) U.S. GDP is unchanged; U.S. GNP increases
 - D) Both U.S. GDP and GNP are unchanged
11. Which of the following is a limitation of using GDP per capita as a measure of living standards?
- A) It adjusts for differences in population size across countries
 - B) It accounts for income inequality within a country
 - C) It fails to capture the distribution of income or non-market production
 - D) It overstates the effect of inflation on purchasing power
12. The CPI for Year 1 is 110 and the CPI for Year 2 is 121. What is the inflation rate between Year 1 and Year 2?
- A) 11%
 - B) 10%
 - C) 9%
 - D) 12%
13. A market basket costs \$200 in the base year and \$230 in the current year. What is the CPI for the current year?
- A) 87
 - B) 115
 - C) 130
 - D) 100
14. Which of the following best illustrates the substitution bias in the CPI?
- A) New smartphones are added to the market basket immediately after release

- B) Consumers switch from beef to chicken when beef prices rise, but the basket keeps the same quantity of beef
 - C) The CPI rises faster than the GDP deflator during an expansion
 - D) Quality improvements in cars cause the CPI to understate inflation
15. Which of the following is a key difference between the CPI and the GDP deflator?
- A) The CPI measures prices economy-wide while the GDP deflator tracks consumer goods
 - B) The GDP deflator uses a fixed basket of goods while the CPI's basket changes with production
 - C) The CPI tends to understate inflation while the GDP deflator tends to overstate it
 - D) The GDP deflator updates automatically with production while the CPI uses a fixed basket
16. Which of the following groups is most harmed by unanticipated inflation?
- A) Borrowers with fixed-rate mortgages
 - B) Holders of real assets like land and property
 - C) Workers with wages tied to a cost-of-living adjustment
 - D) Retirees living on fixed nominal incomes
17. The real interest rate is best described as:
- A) The interest rate set by the Federal Reserve for interbank lending
 - B) The nominal interest rate adjusted for expected inflation
 - C) The rate of return on government bonds after taxes
 - D) The average interest rate across all outstanding consumer loans
18. Which of the following is NOT counted as unemployed in the official unemployment rate?
- A) A worker laid off last month who is actively applying for jobs
 - B) A recent college graduate searching for their first job
 - C) A worker who stopped looking for work after six months of rejection
 - D) A worker on temporary furlough who expects to be recalled
19. The labor force participation rate measures:
- A) The share of the labor force that is currently employed
 - B) The share of the working-age population that is either employed or actively seeking work
 - C) The share of unemployed workers who receive government benefits
 - D) The ratio of full-time workers to part-time workers in the economy
20. A worker who lost her job because her factory was automated and her skills are no longer in demand is experiencing:
- A) Frictional unemployment
 - B) Cyclical unemployment
 - C) Seasonal unemployment
 - D) Structural unemployment
21. Which of the following is the best example of frictional unemployment?
- A) A steelworker who lost his job when the plant closed permanently
 - B) A marketing manager who resigned to look for a higher-paying position

- C) A construction worker laid off because the economy entered a recession
 - D) A retail worker whose hours were cut after the holiday shopping season
22. At full employment, which of the following is true?
- A) The unemployment rate is zero
 - B) All frictional and structural unemployment has been eliminated
 - C) Cyclical unemployment is zero and only frictional and structural unemployment remain
 - D) The economy is producing beyond its potential GDP
23. Which of the following would cause the official unemployment rate to decrease without any new jobs being created?
- A) More workers enter the labor force after hearing job prospects have improved
 - B) Discouraged workers stop searching and exit the labor force
 - C) The government increases transfer payments to unemployed workers
 - D) Part-time workers are reclassified as fully employed
24. Which of the following best describes the relationship shown by the Short-Run Phillips Curve?
- A) A positive relationship between the price level and real output
 - B) An inverse relationship between the inflation rate and the unemployment rate
 - C) A positive relationship between inflation expectations and real wages
 - D) An inverse relationship between nominal GDP growth and the price level
25. Which of the following would cause the Short-Run Phillips Curve to shift upward?
- A) A decrease in aggregate demand
 - B) Falling oil prices that reduce production costs
 - C) Rising inflation expectations among workers and firms
 - D) An increase in labor force participation
26. The Long-Run Phillips Curve is vertical because:
- A) Inflation and unemployment are unrelated in all time periods
 - B) Workers and firms eventually adjust their expectations, returning unemployment to the NRU regardless of the inflation rate
 - C) The government always intervenes to stabilize prices before long-run adjustment occurs
 - D) Aggregate demand cannot change in the long run
27. An economy is operating below its natural rate of unemployment. According to the Long-Run Phillips Curve model, what will happen over time if no policy action is taken?
- A) The economy will remain at low unemployment permanently as firms continue hiring
 - B) Inflation expectations will fall, shifting the SRPC downward and reducing unemployment
 - C) Inflation expectations will rise, shifting the SRPC upward until unemployment returns to NRU
 - D) The government will be forced to raise taxes to cool the overheating economy
28. Which of the following best describes stagflation?
- A) A period of rapid economic growth accompanied by low unemployment
 - B) High inflation and high unemployment occurring simultaneously, represented by an upward

shift of the SRPC

- C) A movement down and to the right along the Short-Run Phillips Curve
- D) Deflation accompanied by rising unemployment during a severe recession

29. Which of the following best describes what happens to the economy as it moves from a trough to a peak along the business cycle?

- A) Real GDP falls, unemployment rises, and inflation decreases
- B) Real GDP rises, unemployment falls, and inflationary pressure increases
- C) Real GDP rises, unemployment rises, and the price level remains stable
- D) Real GDP falls, unemployment falls, and inflation accelerates

30. Which of the following correctly defines a recession using the conventional economic rule?

- A) A single quarter of negative real GDP growth accompanied by rising unemployment
- B) Two consecutive quarters of negative real GDP growth
- C) A period in which the unemployment rate exceeds the natural rate by more than 2%
- D) Any period in which inflation and unemployment rise at the same time

31. At the peak of the business cycle, which of the following is most likely true?

- A) Cyclical unemployment is at its highest and inflation is subdued
- B) Real GDP equals potential GDP and the economy is about to begin expanding
- C) The economy is at or above potential output and inflationary pressures are strongest
- D) Consumer confidence is at its lowest and investment spending is declining

32. Which of the following is a leading indicator of the business cycle?

- A) The unemployment rate
- B) Outstanding consumer loans
- C) New building permits issued
- D) Real personal income

33. Which of the following is a lagging indicator of the business cycle?

- A) Stock market prices
- B) Consumer confidence index
- C) New orders for capital goods
- D) The unemployment rate

34. An economy has a recessionary gap. Which of the following is true?

- A) Actual GDP exceeds potential GDP and cyclical unemployment is zero
- B) Actual GDP is below potential GDP and cyclical unemployment exists
- C) The economy is at its peak and inflation is accelerating
- D) The labor force participation rate is above its long-run average

35. A country's exports total \$280 billion and its imports total \$350 billion. Which of the following correctly describes its net export position and its effect on GDP?

- A) Trade surplus of \$70 billion; increases GDP
- B) Trade deficit of \$70 billion; decreases GDP

- C) Trade deficit of \$70 billion; increases GDP
 - D) Trade surplus of \$70 billion; decreases GDP
36. Which of the following would shift the Long-Run Phillips Curve to the left, indicating a lower natural rate of unemployment?
- A) An increase in inflation expectations among workers
 - B) A negative supply shock such as a spike in energy prices
 - C) Improved job-matching technology that reduces the duration of frictional unemployment
 - D) An increase in government transfer payments to unemployed workers
37. According to the expenditure approach, which component of GDP is typically the largest in the United States?
- A) Government purchases (G)
 - B) Investment (I)
 - C) Net exports ($X - M$)
 - D) Consumption (C)
38. Which of the following is true of the GDP deflator but NOT the CPI?
- A) It measures changes in the price level over time
 - B) It is used to convert nominal values into real values
 - C) Its basket of goods automatically updates to reflect what the economy actually produces
 - D) It tends to overstate inflation due to substitution bias
39. A worker is employed part-time but wants and is available for full-time work. How is this worker classified in official labor market statistics?
- A) Unemployed, because they are not working their desired hours
 - B) Not in the labor force, because they are not fully employed
 - C) Employed, because they are working and receiving a wage
 - D) A discouraged worker, because their situation reflects labor market weakness
40. Which of the following scenarios best illustrates cost-push inflation?
- A) Consumer confidence surges and households dramatically increase spending
 - B) The government enacts a large stimulus package that raises aggregate demand
 - C) A global oil shortage causes energy and transportation costs to rise across all industries
 - D) The central bank lowers interest rates, encouraging more borrowing and investment

II. True or False

1. GDP measures the total market value of all goods — final and intermediate — produced within a country's borders in a given year.
2. A U.S. company operating a factory in Mexico contributes to U.S. GDP.
3. Transfer payments such as Social Security are included in the Government component of GDP.

4. The unemployment rate can fall even when no new jobs are created.
5. Full employment means that every member of the working-age population has a job.
6. Inflation always harms all members of society equally.
7. The Short-Run Phillips Curve shows an inverse relationship between inflation and unemployment.
8. A worker who is employed part-time but wants full-time work is counted as unemployed in the official unemployment rate.
9. An upward shift of the SRPC can be caused by a negative supply shock such as a sudden rise in oil prices.
10. Real GDP rising faster than nominal GDP indicates that inflation is occurring.
11. The GDP deflator uses a fixed basket of goods, just like the CPI.
12. In the long run, policymakers can permanently reduce unemployment below the NRU by increasing aggregate demand.
13. Net exports are negative when a country imports more than it exports.
14. Discouraged workers are counted as unemployed in the official unemployment rate.
15. Stock and bond purchases by households are included in the Investment (I) component of GDP.

III. Fill in the Blank

1. The formula for GDP using the expenditure approach is: $GDP = \underline{\hspace{1cm}} + \underline{\hspace{1cm}} + \underline{\hspace{1cm}} + \underline{\hspace{1cm}}$.
2. A sustained decrease in the overall price level is called _____, while a slowdown in the rate of price increases is called _____.
3. The three types of unemployment that always exist in a healthy economy are _____, _____, and _____. Together, they define the _____.
4. The _____ measures prices across the whole economy and changes its basket automatically with what the economy produces, making it less susceptible to substitution bias than the CPI.
5. When actual GDP is below potential GDP, the economy faces a _____ gap, and _____ unemployment exists.
6. The Long-Run Phillips Curve is _____ (shape) and is located at the _____.

7. In the circular flow model, _____ represent leakages from the domestic economy, while _____ represent injections from abroad.
8. A worker who lost their job because their factory was automated and their skills are no longer relevant is experiencing _____ unemployment.
9. If nominal GDP is \$800 billion and the GDP deflator is 160, real GDP is \$_____ billion.
10. The CPI formula is: $CPI = \left(\frac{\text{_____}}{\text{_____}} \right) \times 100$.
11. Rising inflation expectations among workers cause the Short-Run Phillips Curve to shift _____.
12. _____ indicators change before the economy turns, while _____ indicators change after, and _____ indicators move in step with economic activity.
13. The _____ approach to GDP yields the same result as the expenditure approach by summing all factor payments: wages, rent, interest, and profit.
14. A negative supply shock causes both inflation and unemployment to rise simultaneously, a condition known as _____.
15. The _____ rate measures the share of the working-age population that is either employed or actively seeking work.

IV. Matching

Match each term in Column A with its correct description in Column B.

Term	Definition
1. Structural unemployment	A. Unemployment caused by a mismatch between worker skills and available jobs
2. GDP Deflator	B. People who have stopped looking for work and are no longer counted in the labor force
3. Transfer payments	C. The unemployment rate when only frictional and structural unemployment exist
4. Discouraged workers	D. Government payments like Social Security that are not purchases of goods or services
5. Recessionary gap	E. A situation where actual GDP falls below potential GDP
6. NRU	F. GDP adjusted for price changes using base year

7. Leading indicator	G. Measures price changes as a ratio of nominal to real GDP
8. Stagflation	H. Unemployment caused by a downturn in aggregate demand
9. Real GDP	I. High inflation and high unemployment occurring simultaneously
10. Cyclical Unemployment	J. A statistic that changes before the economy turns

V. Short Answer

1. Explain why GDP is considered an imperfect measure of a nation's well-being. Give at least three specific examples of things GDP fails to capture.
2. Distinguish between frictional, structural, and cyclical unemployment. Why is cyclical unemployment considered the most problematic of the three from a policy perspective?
3. Explain the difference between a movement along the Short-Run Phillips Curve and a shift of the Short-Run Phillips Curve. Give one example of what causes each.
4. Why does the CPI tend to overstate inflation? Describe all three biases in your explanation.
5. Explain the concept of the natural rate of unemployment. Why does the Long-Run Phillips Curve become vertical at this point?
6. How does the circular flow model change when the government and international sectors are added? What are injections and leakages, and why do they matter?
7. Distinguish between real and nominal GDP. Why is real GDP a more useful measure when comparing economic performance across different years?
8. Explain how unanticipated inflation redistributes wealth. Who tends to benefit and who tends to be harmed?

VI. Calculations

Show all work clearly. Include units in your final answer.

1. A market basket costs \$240 in the base year, \$264 in Year 1, and \$285 in Year 2.
 - A) Calculate the CPI for Year 1 and Year 2.
 - B) Calculate the inflation rate between Year 1 and Year 2.
 - C) If your nominal wage is \$52,000 in Year 2 but was \$50,000 in the base year, have you experienced a real wage increase? Show your calculation.

2. An economy reports the following data:

Year	Nominal GDP	GDP Deflator
2022	\$600 billion	100
2023	\$672 billion	112
2024	\$720 billion	120

A) Calculate real GDP for each year.

B) Between 2023 and 2024, did real output actually increase? What does your answer tell you about the source of nominal GDP growth in that period?

3. Use the following data to calculate GDP using the expenditure approach:

Component	Value (billions)
Consumer spending on services	\$420
Consumer spending on durable goods	\$180
Consumer spending on nondurable goods	\$210
Business investment in equipment	\$150
Change in business inventories	\$20
Residential construction	\$60
Federal government purchases	\$200
State and local government purchases	\$180
Government transfer payments	\$90
Exports	\$300
Imports	\$340

A) Calculate total GDP.

B) Identify which item above should NOT be included and explain why.

4. A country has a working-age population of 250 million. Of these, 160 million are employed, 10 million are unemployed and actively searching, 5 million are discouraged workers, and the rest are not in the labor force.

- A) What is the size of the labor force?
- B) Calculate the official unemployment rate.
- C) Calculate the labor force participation rate.
- D) If discouraged workers were counted as unemployed, how would the unemployment rate change? Calculate the new rate.

5. Consider the following scenarios:

- A) If the nominal interest rate is 7% and the expected inflation rate is 2.5%, what is the real interest rate?
- B) A bank lends money at a 5% nominal rate, expecting 2% inflation. Actual inflation turns out to be 4%. Who benefits — the bank or the borrower? Explain.
- C) A worker earned a nominal wage of \$45,000 in Year 1 when the CPI was 150. In Year 2, their nominal wage rose to \$48,000 and the CPI rose to 165. Calculate their real wage in both years and determine whether purchasing power increased or decreased.

VII. Graphing

Draw each graph neatly and label all axes, curves, and relevant points clearly.

1. Draw a complete business cycle diagram.

- Label the vertical axis "Real GDP" and the horizontal axis "Time"
- Draw and label the potential GDP trend line
- Label all four phases: expansion, peak, contraction, and trough
- Identify and label one recessionary gap and one inflationary gap
- Add an arrow showing the direction of movement during an expansion

2. Draw a diagram showing both the Short-Run and Long-Run Phillips Curves.

- Label the vertical axis "Inflation Rate (%)" and the horizontal axis "Unemployment Rate (%)"
- Draw and label $SRPC_1$ and the LRPC
- Mark and label the NRU on the horizontal axis
- Show a point (A) representing a recessionary period and a point (B) representing an expansionary period
- Draw $SRPC_2$ to show the effect of a negative supply shock and label a new point (C) showing stagflation

3. Starting from a point below the NRU on $SRPC_1$ (Point A):

- Show the short-run effect of expansionary policy that pushes unemployment below the NRU
- Show the long-run adjustment as inflation expectations rise, shifting the curve to $SRPC_2$
- Mark the final long-run equilibrium (Point B) on the LRPC
- Annotate your diagram explaining why the economy returned to the NRU in the long run

VIII. Long Answer

1. A government official claims that because her country's nominal GDP grew by 10% last year, citizens must be better off. A journalist challenges this claim.

- A) Explain one reason why a 10% increase in nominal GDP does not necessarily mean that real output increased.
- B) Calculate the real GDP growth rate if nominal GDP grew from \$400 billion to \$440 billion and the GDP deflator rose from 100 to 110.
- C) Identify and explain two things that GDP does not measure that are relevant to citizens' actual well-being.
- D) Explain the difference between the expenditure approach and the income approach to calculating GDP. Why do both approaches yield the same result?

2. The following question concerns the Consumer Price Index (CPI).

- A) Explain how the CPI is constructed and calculated. What does a CPI of 130 mean?
- B) Identify and explain all three biases that cause the CPI to overstate inflation.
- C) A worker's nominal wage grew from \$60,000 to \$65,000 over two years. The CPI rose from 150 to 168 over the same period. Calculate the worker's real wage in both years and determine whether purchasing power improved or declined.
- D) Explain the difference between the CPI and the GDP deflator. In what situation might they give different signals about inflation, and why?
- E) Explain how unanticipated inflation affects borrowers and lenders differently.

3. The following question concerns the Phillips Curve.

- A) Draw a correctly labeled diagram showing the SRPC and the LRPC. Label the NRU on your Graph.
- B) Suppose the government uses expansionary fiscal policy to reduce unemployment below the NRU. Using your diagram, show and explain the short-run effect on inflation and unemployment.
- C) Explain the long-run adjustment process. Why does the economy ultimately return to the NRU, and what is the lasting consequence of the policy in part B?
- D) A severe drought causes food and energy prices to spike. Using a new Phillips Curve diagram, show and explain the effect on the SRPC. What condition does this represent, and why is it particularly difficult for policymakers to address?
- E) How does the Phillips Curve relate to the phases of the business cycle? Explain what happens to inflation and unemployment as the economy moves from a trough to a peak.