CHAPTER 6

**Business Cycles, Unemployment, and Inflation**

This chapter discusses the ***business cycle***: the ups and downs in the real output of the economy that occur over the years. These alternating periods of prosperity and hard times have taken place over a long period in which there has been an long-term, upward trend in real output, employment, and the standard of living. The duration and intensity of these booms and busts have been varied and they can create substantial economic instability in the economy.

Economists think that business cycles arise from ***shocks***, which are situations where households and businesses expect one thing to happen but then something else happens. The economy can be exposed to ***demand shocks*** and ***supply shocks***. Such shocks can have positive and negative effects on the economy. How well the economy responds to them depends in part on the flexibility or changes in the prices of goods and services.

Two principal problems result from the economic instability of the business cycle. ***Unemployment*** accompanies a downturn in the level of economic activity. With less economic activity, fewer workers need to be employed in the economy. As a result, unemployment can impose a significant economic cost on the economy in the form of lost production and output and create a ***GDP gap*** (the difference between potential GDP and actual GDP).

The other problem is ***inflation*** or an increase in the general (or *average*) level of prices in an economy. Inflation may result from increases in demand, from increases in costs, or from both sources. Regardless of its cause, inflation may impose a real hardship on different groups in our society because it can arbitrarily redistribute real income. Unanticipated inflation hurts those on fixed incomes, those who save money, and those who lend money. If inflation is anticipated, some of its burden can be reduced, but that depends on whether a group can protect their real income. Inflation also has redistribution effects on the real output of the economy. ***Cost-push inflation*** and ***demand-pull inflation*** have different effects on output and employment that vary with the severity of the inflation.

The measurement of GDP, the basics of economic growth, and the twin problems of unemployment and inflation are important topics for understanding how the macroeconomy works.

* **CHECKLIST**

When you have studied this chapter you should be able to

* + Explain what the business cycle means.
* Describe the four phases of a generalized business cycle.
* Explain the relationship between business cycles and economic shocks in the economy.
* Describe the immediate cause of the cyclical changes in the levels of real output and employment.
* Identify differences in the way cyclical fluctuations affect industries producing capital and consumer durable goods, and how they affect industries producing consumer nondurable goods and services.
	+ Describe how the Bureau of Labor Statistics (BLS) measures the rate of unemployment.
	+ Distinguish among frictional, structural, and cyclical types of unemployment.
	+ Define full employment and the fully employed unemployment rate.
	+ Identify the economic costs of unemployment.
	+ Define the GDP gap.
	+ Discuss the unequal burdens of unemployment.
	+ Define inflation and the rate of inflation.
	+ Explain how inflation is measured with the Consumer Price Index.
	+ Define demand-pull and cost-push inflation.
	+ Distinguish between real and nominal income and calculate real income when given necessary data.
	+ List groups that are hurt by and groups that are unaffected or benefit from unanticipated inflation.
	+ Describe how the redistributive effects of inflation are changed when it is anticipated.
	+ Explain the difference between the real and the nominal interest rates.
	+ Describe the effect of cost-push and demand-pull inflation on real output.
* **CHAPTER OUTLINE**
1. The long-term economic growth trend of the U. S. economy is one of expansion, but such growth has been interrupted by periods of economic instability. The ***business cycle*** means alternating periods of prosperity and recession. These recurrent periods of ups and downs in employment, output, and prices are irregular in their duration and intensity, but the typical pattern is ***peak, recession, trough,*** and ***expansion***, to another peak. Peak is the maximum level of real output at the start of the cycle. It is followed by a recession, which is a period of decline in real output that lasts six months or longer. When real output is no longer declining, it has hit its trough. This low point is followed by expansion or recovery in which the economy experiences an increase in real output.
	1. Business cycles are the result of economic ***shocks*** to the economy, which are unexpected by households or business firms. There can be ***demand shocks*** and ***supply shocks.*** Such shocks also can be positive or negative. Economists think that changes in the levels of output and employment are largely the result of *unexpected* changes in the level of total spending in the economy. These economic shocks require difficult adjustments to be made by households and businesses in the economy, but such adjustments are not easily or quickly made because prices tend to be sticky. If total spending unexpectedly falls and prices are relatively fixed, business firms will not be able to sell all their output and have to cut back on production. As a consequence, GDP falls, income falls, unemployment rises, and the economy moves into recession.
	2. The business cycle affects almost the entire economy, but it does not affect all parts in the same way and to the same degree: The production of capital and consumer durable goods fluctuates more than the production of consumer nondurable goods and services during the cycle because the purchase of capital and consumer durable goods can be postponed by businesses or households.
	3. *Applying the Analysis* (Stock Prices and Macroeconomic Instability). If stock prices rise over time, they can lead to increased spending because investors feel wealthier (the *wealth effect*) and firms can purchase more capital goods (the *investment effect*). Such effects, however, are relatively weak, which means that day-to-day and year-to-year changes in the stock market have relatively minor long-term consumption and investment impacts on the economy. Stock market bubbles, however, create serious problems for the economy because of the rapid decrease in wealth and investment spending, and the resulting general pessimism about the economy.
2. Twin problems arise from business cycles. One is ***unemployment***; the other is ***inflation***.
	1. The ***unemployment rate*** is calculated by dividing the number of persons in the ***labor force*** who are unemployed by the total number of persons in the labor force.
	2. Full employment does not mean that all workers in the labor force are employed and there is no unemployment; some unemployment is normal. There are at least three types of unemployment.
		1. ***Frictional unemployment*** is due to workers searching for new jobs or waiting to take new jobs; this type of unemployment is generally desirable.
		2. ***Structural unemployment*** is due to the changes in technology and in the types of goods and services consumers wish to buy; these changes affect the total demand for labor in particular industries or regions.
		3. ***Cyclical unemployment*** is due to insufficient total spending in the economy; this type of unemployment arises during the recession phase of the business cycle.
	3. “Full employment” is less than 100% because some frictional and structural unemployment is unavoidable. The unemployment rate when the economy is “fully employed” is the sum of frictional and structural unemployment, and is achieved when cyclical unemployment is zero (the real output of the economy is equal to its ***potential output***). The full-employment unemployment rate is estimated to be less than 5 percent.
	4. Unemployment has an economic cost and the ***GDP******gap*** is a measure of that cost. It is the difference between actual and potential GDP. When the difference is negative, it means that the economy is underperforming relative to its potential. This cost is unequally distributed among different groups of workers in the labor force.
	5. Unemployment rates differ across nations because of differences in phases of the business cycle and full employment rates of unemployment.
3. Over its history, the U.S. economy has experienced not only periods of unemployment but periods of ***inflation***.
	1. Inflation is an increase in the general level of prices in the economy; a decline in the level of prices is deflation.
	2. The primary measure of inflation in the United States is the **Consumer Price Index** (CPI). It compares the prices of a “market basket” of consumer goods in a particular year to the prices for that market basket in a base period, to produce a price index. The rate of inflation from one year to the next is equal to the percentage change in the CPI between the current year and the preceding year. The rule of 70 can be used to calculate the number of years it will take for the price level to double at any given rate of inflation.
	3. The United States has experienced both inflation and deflation, but the past half-century has been a period of inflation. Other industrial nations also experienced inflation.
	4. There are at least two types of inflation. They may operate separately or simultaneously to raise the price level.
		1. ***Demand-pull inflation*** is the result of excess total spending in the economy.
		2. ***Cost-push* *inflation*** is the result of factors that raise per-unit production costs. With cost-push inflation, output and employment decline as the price level rises. The major source of this inflation has been supply shock from an increase in the prices of resource inputs.
4. Inflation arbitrarily redistributes real income. It injures those whose real income falls and benefits those whose real income rises. ***Real income*** is determined by dividing ***nominal income*** by the price level expressed in hundredths. The redistribution effects of inflation depend on whether it is anticipated or unanticipated.
	1. Those groups hurt by ***unanticipated inflation*** are *fixed-income receivers*, *savers*, and *creditors* because it lowers the real value of their assets.
	2. Those groups unaffected or helped by unanticipated inflation are *flexible-income receivers* and *debtors* because it lowers the real value of debts to be repaid.
	3. When there is ***anticipated inflation*** people can adjust their nominal incomes to reflect the expected rise in the price level, and the redistribution of income and wealth is lessened. To reduce the effects of inflation on a nominal interest rate, an inflation premium (the expected rate of inflation) is added to the ***real interest rate***.
5. Inflation also has an effect on ***real output*** that varies by the type of inflation and its severity.
	1. Cost-push inflation reduces real output, employment, and income.
	2. Views of mild demand-pull inflation vary. It may reduce real output, or it may be a necessary by-product of economic growth.
	3. *Applying the Analysis* (Hyperinflation). Extremely high rates of inflation are called hyperinflation, and it can lead to a breakdown of the economy by redistributing income and severely reducing real output and employment. Historical examples can be found in Germany after World War I and more recently in Nicaragua and Serbia.
* **HINTS AND TIPS**
1. What should be kept in mind when thinking about business cycles is that the long-term growth trend for the economy is upward-sloping over time. Business cycles are shorter-term events that occur around that long-term upward trend and keep that trend from being a straight, upward-sloping line.
2. Full employment does not mean that everyone who wants to work has a job. Full employment will be less than 100 percent. Remember that there are three types of unemployment: frictional, structural, and cyclical. There will always be some unemployment arising from frictional reasons (e.g., people quitting their current jobs and searching for new jobs) or structural reasons (e.g., changes in industry demand). These are natural reasons for unemployment. What is unnatural is a cyclical downturn in the economy that produces cyclical unemployment. When it occurs, the economy is not achieving its potential output. Thus, full employment means that there are no cyclical reasons causing unemployment, only frictional or structural reasons.
3. Inflation is a rise in the *general* level of prices, not just a rise in the prices of a few goods and services. An increase in the price of a good or service is caused by supply or demand factors. In an economy, however, some prices increase and some prices decrease. What is important for understanding inflation is whether prices overall in the economy are increasing. The macroeconomic reasons for the increase in the general level of prices explained in Chapter 6 are different from the microeconomic reasons for a price increase that you learned about in Chapter 3.
* **IMPORTANT TERMS**

|  |  |
| --- | --- |
| **business cycles****recession****expansion****shocks****demand shocks****supply shocks****sticky prices****labor force****unemployment rate****frictional** **unemployment****structural** **unemployment****cyclical** **unemployment** | **potential output****GDP gap****inflation****Consumer Price Index (CPI)****demand-pull inflation****cost-push inflation****nominal income****real income****real interest rate****nominal interest rate****deflation** |

**SELF-TEST**

* **FILL-IN QUESTIONS**
1. The business cycle is a term that encompasses the recurrent ups, or (decreases, increases) \_\_\_\_\_\_\_\_\_\_\_\_\_\_, and downs, or \_\_\_\_\_\_\_\_\_\_\_\_\_\_, in the level of business activity in the economy.
2. A period of decline in total output, income, and employment that typically lasts six months or more is (an expansion, a recession) \_\_\_\_\_\_\_\_\_\_\_\_\_\_, but a period in which real GDP, income, and employment rise is \_\_\_\_\_\_\_\_\_\_\_\_\_\_.
3. Business cycles arise because of economic (shocks, deflation) \_\_\_\_\_\_\_\_\_\_\_\_\_\_ that the economy has difficulty adjusting to quickly or easily. Such changes in the demand for or supply of goods and services in the economy are (expected, unexpected) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
4. The reasons that the economy may not be able to adjust easily or quickly to negative demand shocks is that in the short run, prices are (flexible, sticky) \_\_\_\_\_\_\_\_\_\_. In such situations, the economy responds with a decline in (prices, output) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and if it is long-lasting, there can be calls for government intervention.
5. Several reasons are given by economists for why economic shocks create business cycles. Some economists point to the (regularity, irregularity) \_\_\_\_\_\_\_\_\_\_\_\_ of major innovations in the economy. Other economists cite (expected, unexpected) \_\_\_\_\_\_\_\_\_\_\_ changes in productivity. Still other economists attribute it to the (constancy, variability) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the supply of money from the nation’s central bank.
6. Whatever the underlying reason for business cycles, most economists agree that the (immediate, future) \_\_\_\_\_\_\_\_\_\_\_\_ cause of a majority of such cycles is unexpected changes in the level of total (employment, spending) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
7. If prices are fixed, an unexpected fall in total spending results in a (rise, fall) \_\_\_\_\_\_\_\_\_ in sales, production, and employment, thus GDP for the economy will (increase, decrease) \_\_\_\_\_\_\_\_\_\_\_\_.
8. Conversely, if prices are fixed, an unexpected rise in total spending results in a (rise, fall) \_\_\_\_\_\_\_\_\_ in sales, production, and employment, thus GDP for the economy will (increase, decrease) \_\_\_\_\_\_\_\_\_\_\_\_.
9. Expansion and contraction of the economy affect to a greater extent the production and employment in the consumer (durables, nondurables) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and (capital, consumer) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ goods industries than they do (durable, nondurable) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ goods and service industries.
10. The unemployment rate is found by dividing the number of (employed, unemployed) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ persons by the (population, labor force) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and (multiplying, dividing) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ by 100.
11. When workers are searching for new jobs or waiting to start new jobs, this type of unemployment is called (structural, frictional, cyclical) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, but when workers are laid off because of changes in the consumer demand and technology in industries or regions, this unemployment is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; when workers are unemployed because of insufficient total spending in the economy, this type of unemployment is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
12. The fully employed unemployment rate is equal to the total of (frictional and structural, cyclical and frictional) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ unemployment in the economy. It is realized when the (frictional, cyclical) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ unemployment in the economy is equal to zero and when the actual output of the economy is (less than, equal to) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ its potential output. When the economy achieves its fully employed unemployment rate, the number of job seekers is (greater than, equal to) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the number of job vacancies.
13. The GDP gap is equal to the actual GDP (minus, plus) \_\_\_\_\_\_\_\_\_\_\_\_ the potential GDP.
14. Inflation means (an increase, a decrease) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the general level of (unemployment, prices) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the economy. To calculate the rate of inflation from year 1 to year 2, subtract the price index for year 1 from year 2, then (multiply, divide) \_\_\_\_\_\_\_\_\_\_\_\_\_\_ the result by the price index for year 1, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_ by 100.
15. The basic cause of demand-pull inflation is (an increase, a decrease) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in total spending beyond the full employment output rate in the economy. Cost-push inflation is explained in terms of factors that raise per-unit (inflation, production) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ costs. In practice, it is (easy, difficult) \_\_\_\_\_\_\_\_\_\_ to distinguish between the two types of inflation.
16. Unanticipated inflation hurts those whose nominal incomes are relatively (fixed, flexible) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, penalizes (savers, borrowers) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and hurts (creditors, debtors) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
17. The redistributive effects of inflation are less severe when it is (anticipated, unanticipated) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Clauses in labor contracts that call for automatic adjustments of workers’
incomes from the effects of inflation are
called (unemployment benefits, cost-of-living) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ adjustments.
18. The percentage increase in purchasing power that the lender receives from the borrower is the (real, nominal) \_\_\_\_\_\_\_\_\_\_\_\_\_ rate of interest; the percentage increase in money that the lender receives is the \_\_\_\_\_\_\_\_\_ rate of interest. If the nominal rate of interest is 8% and the real interest rate is 5%, then the inflation premium is (8, 5, 3) \_\_\_\_\_%.
19. Cost-push inflation (increases, decreases) \_\_\_\_\_\_\_\_\_\_\_\_\_\_ real output. The output effects of demand-pull inflation are (more, less) \_\_\_\_\_\_\_\_\_ certain. Some economists argue that mild demand-pull inflation (increases, decreases) \_\_\_\_\_\_\_\_\_\_\_\_ real output while others argue that it \_\_\_\_\_\_\_\_\_\_\_\_ real output.
20. A decline in the general level of prices in the economy is (hyperinflation, deflation) \_\_\_\_\_\_\_\_\_\_\_ whereas an extraordinarily rapid inflation is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* **TRUE–FALSE QUESTIONS**

*Circle T if the statement is true, F if it is false.*

1. The business cycle is best defined as alternating periods of increases and decreases in the rate of inflation in the economy. **T F**
2. Individual business cycles tend to be of roughly equal duration and intensity. **T F**
3. Fluctuations in real output in the economy are caused by economic shocks and because prices are sticky, it is difficult for the economy to quickly adjust to such shocks. **T F**
4. If the level of total spending unexpectedly falls, and prices are sticky, then output, employment, and incomes will rise. **T F**
5. During a recession, industries that produce capital goods and consumer durables typically suffer smaller output and employment declines than do industries providing service and nondurable consumer goods. **T F**
6. The unemployment rate is equal to the number of people in the labor force divided by the number of people who are unemployed. **T F**
7. Frictional unemployment is not only inevitable but also partly desirable so that people can voluntarily move to better jobs. **T F**
8. When the number of people seeking employment is less than the number of job vacancies in the economy, the actual rate of unemployment is less than full employment. **T F**
9. If the economy is at full employment, the actual and potential outputs of the economy are equal.

 **T F**

1. Unemployment imposes equal burdens on different groups in the economy. **T F**
2. The economic cost of cyclical unemployment is the goods and services that are not produced by the economy. **T F**
3. Inflation is defined as an increase in the total output of an economy. **T F**
4. If the price level increases by 10% each year, the price level will double every 10 years. **T F**
5. The essence of demand-pull inflation is “too much spending chasing too few goods.” **T F**
6. Cost-push inflation explains rising prices in terms of factors that increase per-unit production cost. **T F**
7. A person’s real income is the amount of goods and services that the person’s nominal (or money) income will enable him or her to purchase. **T F**
8. Whether inflation is anticipated or unanticipated, the effects of inflation on the distribution of income are the same. **T F**
9. Those who borrow money at a fixed interest rate are hurt by unanticipated inflation. **T F**
10. Cost-push inflation reduces real output and increases unemployment. **T F**
11. Hyperinflation is caused by reckless expansion of the money supply and causes severe declines in real output. **T F**
* **MULTIPLE-CHOICE QUESTIONS**

*Circle the letter that corresponds to the best answer.*

1. Which is one of the two aspects of a business cycle?
	1. inflation
	2. recession
	3. unemployment
	4. hyperinflation
2. Most economists believe that the immediate determinant of the levels of domestic output and employment is
	1. the price level
	2. the level of total spending
	3. the size of the civilian labor force
	4. the nation’s stock of capital goods
3. Production and employment would be *least* affected by a severe recession in which type of industry?
	1. nondurable consumer goods
	2. durable consumer goods
	3. capital goods
	4. labor goods
4. The unemployment rate in an economy is 8%. The total population of the economy is 250 million, and the size of the civilian labor force is 150 million. The number of employed workers in this economy is
	1. 12 million
	2. 20 million
	3. 138 million
	4. 140 million
5. The labor force includes those who are
	1. less than 16 years of age
	2. in correctional institutions
	3. not seeking work
	4. employed
6. A worker who loses a job at a petroleum refinery because consumers and business firms switch from the use of oil to the burning of coal is an example of
	1. frictional unemployment
	2. structural unemployment
	3. cyclical unemployment
	4. disguised unemployment
7. A worker who has quit one job and is taking 2 weeks off before reporting to a new job is an example of
	1. frictional unemployment
	2. structural unemployment
	3. cyclical unemployment
	4. disguised unemployment
8. A decline in total spending in the economy results in
	1. frictional unemployment
	2. structural unemployment
	3. cyclical unemployment
	4. search unemployment
9. The full employment in the economy has been achieved when
	1. frictional unemployment is zero
	2. structural unemployment is zero
	3. cyclical unemployment is zero
	4. the unemployment rate is zero
10. The burden of unemployment is *least* felt by
	1. professionals
	2. laborers
	3. teenagers
	4. males
11. If the Consumer Price Index was 110 in one year and 117 in the next year, then the rate of inflation from one year to the next was
	1. 3.5%
	2. 4.7%
	3. 6.4%
	4. 7.1%
12. The price of a good has doubled in about 14 years. The approximate annual percentage rate of increase in the price level over this period has been
	1. 2%
	2. 3%
	3. 4%
	4. 5%
13. Which contributes to cost-push inflation?
	1. an increase in employment and output
	2. an increase in per-unit production costs
	3. a decrease in resource prices
	4. an increase in unemployment
14. If a person’s nominal income increases by 8% while the price level increases by 10%, the person’s real income
	1. increases by 2%
	2. increases by 18%
	3. decreases by 18%
	4. decreases by 2%
15. If the average level of nominal income in a nation is $21,000 and the price level index is 154, the average real income would be about
	1. $12,546
	2. $13,636
	3. $15,299
	4. $17,823
16. Who would be hurt by *unanticipated* inflation?
	1. those living on incomes with cost-of-living adjustments
	2. those who find prices rising less rapidly than their nominal incomes
	3. those who lent money at a fixed interest rate
	4. those who became debtors when prices were lower
17. With no inflation, a bank would be willing to lend a business firm $10 million at an annual interest rate of 8%. But if the rate of inflation was anticipated to be 6%, the bank would charge the firm an annual interest rate of
	1. 2%
	2. 6%
	3. 8%
	4. 14%
18. Cost-push inflation
	1. lowers interest rates
	2. lowers the price level
	3. increases real output
	4. decreases real output
19. What do economists think about the effects of mild demand-pull inflation on real output?
	1. They are positive because businesses must change prices.
	2. They are negative because economic growth depends on total spending.
	3. They are mixed, and could be positive or negative.
	4. They are zero and it indicates that there are no effects.
20. If an economy has experienced an inflation rate of over 1000% per year for several years, this economic condition would best be described as
	1. a GDP gap
	2. hyperinflation
	3. cost-push inflation
	4. a cost-of-living adjustment
* **PROBLEMS**
1. The following table gives statistics on the labor force and total employment during year 1 and year 5. Make the computations necessary to complete the table. (Numbers of persons are in thousands.)

|  |  |  |
| --- | --- | --- |
|  | **Year 1** | **Year 5** |
| Labor force | 84,889 | 95,453 |
| Employed | 80,796 | 87.524 |
| Unemployed | \_\_\_\_\_ | \_\_\_\_\_ |
| Unemployment rate | \_\_\_\_\_ | \_\_\_\_\_ |

1. Suppose that in year 1 an economy is at full employment, has a potential and actual real GDP of $3000 billion, and has an unemployment rate of 5%.

|  |  |  |  |
| --- | --- | --- | --- |
| **Year** | **Actual GDP** | **Potential GDP** | **GDP gap** |
| 1 | $3000.0 | $3000 | $\_\_\_\_\_ |
| 2 | 3724.0 | 3800 | \_\_\_\_\_ |
| 3 | 3712.5 | 4125 | \_\_\_\_\_ |

* 1. Compute the GDP gaps for years 1, 2, and 3 and enter them into the table.
	2. In year 2, the actual real GDP is \_\_\_\_\_\_% of the potential real GDP. (Hint: Divide the actual real GDP by the potential real GDP and multiply by 100.) The actual real GDP is \_\_\_\_\_\_% less than the potential real GDP.
	3. In year 3 the actual real GDP is \_\_\_\_\_\_% of the potential real GDP. The actual real GDP is \_\_\_\_\_\_% less than the potential real GDP.
1. The following table shows the price index in the economy at the end of three different years.

|  |  |  |
| --- | --- | --- |
| **Year** | **Price index** | **Rate of inflation** |
| 1 | 100.00 |  |
| 2 | 112.00 | \_\_\_\_\_% |
| 3 | 123.20 | \_\_\_\_\_ |

* 1. Compute and enter in the table the rates of inflation in years 2 and 3.
	2. Employing the rule of 70, how many years would it take for the price level to double at each of these two inflation rates? \_\_\_\_\_\_\_\_; \_\_\_\_\_\_\_\_
	3. If nominal income was $25,000 in year 2, what was real income that year? \_\_\_\_\_\_\_\_\_\_\_
	4. If the nominal interest rate was 14% to borrow money from year 1 to year 2, what was the approximate real rate of interest over that period? \_\_\_\_\_\_\_\_\_\_\_\_\_
1. Indicate in the space below each of the following the most likely effect—beneficial (**B**) or detrimental (**D**)—of unanticipated inflation on these persons:
	1. A retired business executive who now lives each month by spending a part of the amount that was saved and deposited in a fixed-rate savings account for a long term. \_\_\_\_\_\_
	2. A farmer who borrowed $500,000 from a bank at a fixed rate; the loan must be repaid in the next 10 years. \_\_\_\_\_\_
	3. A retired couple whose sole source of income is the pension they receive from a former employer. \_\_\_\_\_\_
	4. A widow whose income consists entirely of interest received from the corporate bonds she owns. \_\_\_\_\_\_
* **SHORT ANSWER AND ESSAY QUESTIONS**
1. Define the business cycle. Describe the two aspects of a business cycle.
2. What are economic shocks and how do they affect the economy?
3. Why don’t product and resource markets respond quickly to economic imbalances caused by adverse economic shocks to the economy?
4. Describe three different views of economists about the types of economic shocks that are accountable for business cycles.
5. In the opinion of most economists, what is the *immediate* cause of the fluctuations in the levels of output in the economy?
6. Explain how an unexpected fall in total spending affects sales, production, employment, and GDP.
7. Explain how an unexpected rise in total spending affects sales, production, employment, and GDP.
8. Compare how the business cycle affects output and employment in the industries producing capital and durable goods with the way it affects industries producing nondurable goods and services. What causes these differences?
9. Do changes in stock prices averages and thus stock market wealth cause macroeconomic instability? Explain.
10. How is the unemployment rate measured in the United States?
11. Distinguish among frictional, structural, and cyclical unemployment.
12. When is there full employment in the U.S. economy? Answer in terms of the unemployment rate and the actual and potential output of the economy.
13. What groups in the economy tend to bear the burdens of unemployment?
14. What is inflation, and how is the rate of inflation measured?
15. Compare and contrast demand-pull and cost-push types of inflation.
16. What groups benefit from and what groups are hurt by inflation?
17. What is the difference between the effects of unanticipated inflation and the effects of anticipated inflation on the redistribution of real incomes in the economy?
18. What are the effects of cost-push on real output?
19. How does demand-pull inflation affect real output? Are economists in agreement about these effects? Discuss.
20. Explain how hyperinflation affect business, consumers, and real output.

**ANSWERS**

**Chapter 6 Business Cycles, Unemployment, and Inflation**

**FILL-IN QUESTIONS**

1. increases, decreases
2. a recession, an expansion
3. shocks, unexpected
4. sticky, output
5. irregularity, unexpected, variability
6. immediate, spending
7. fall, decrease
8. rise, increase
9. durables, capital, nondurable
10. unemployed, labor force, multiplying
11. frictional, structural, cyclical
12. frictional and structural, cyclical, equal to, equal to
13. minus
14. an increase, prices, divide, multiply
15. an increase, production, difficult
16. fixed, savers, creditors
17. anticipated, cost-of-living
18. real, nominal, 3
19. increases, less, increases, decrease
20. deflation, hyperinflation

**TRUE–FALSE QUESTIONS**

|  |  |  |
| --- | --- | --- |
|  **1.** F, p. 126 |  **8.** T, pp. 131–133 | **15.** T, pp. 136–137 |
|  **2.** F, p. 126 |  **9.** T, pp. 131–133 | **16.** T, pp. 137–138 |
|  **3.** T, pp. 129–127 | **10.** F, pp. 132–133 | **17.** F, pp. 137–138 |
|  4. F, p. 128 | **11.** T, pp. 132–133 | **18.** F, pp. 138–139 |
|  **5.** F, pp. 128–129 | **12.** F, pp. 133–134 | **19.** T, pp. 138–139 |
|  **6.** F, pp. 130–131 | **13.** F, pp. 133–135 | **20.** T, pp. 140–141 |
|  **7.** T, pp. 130–132 | **14.** T, pp. 135–136 |  |

**MULTIPLE-CHOICE QUESTIONS**

|  |  |  |
| --- | --- | --- |
| **1.** b, pp. 126–127 | **8.** c, pp. 130–132 | **15.** b, pp. 137–138 |
| **2.** b, p. 128 | **9.** c, pp. 131–133 | **16.** c, pp. 137–139 |
| **3.** a, pp. 128-–129 | **10.** a, pp. 132–133 | **17.** d, pp. 139–140 |
| **4.** c, pp. 130–131 | **11.** c, pp. 133–135 | **18.** d, pp. 140–141 |
| **5.** d, pp. 130–131 | **12.** d, pp. 133–135 | **19.** c, pp. 140–141 |
| **6.** b, pp. 130–132 | **13.** b, pp. 136–137 | **20.** b, pp. 140–141 |
| **7.** a, pp. 130–132 | **14.** d, pp. 137–138 |  |

**PROBLEMS**

1. year 1: 4,093, 4.8; year 5: 7,929, 8.3
2. *a.*0, 76, 412.5; *b.*98, 2; *c.*90, 10
3. *a.*12, 10; *b.*5.8, 7; *c.*$22,321 ($25,000/1.12); *d.*2% (14% minus 12%)
4. *a.*D; *b.*B; *c.*D; *d.*D

**SHORT ANSWER AND ESSAY QUESTIONS**

|  |  |  |
| --- | --- | --- |
| **1.** pp. 126–127 | **8.** pp. 128–129 | **15.** pp. 135–137 |
| **2.** pp. 126–127 | **9.** pp. 128–130 | **16.** pp. 137–139 |
| **3.** pp. 126–127 | **10.** pp. 130–131 | **17.** pp. 137–140 |
| **4.** pp. 126–128 | **11.** pp. 130–132 | **18.** pp. 140–141 |
| **5.** p. 128 | **12.** pp. 131–133 | **19.** pp. 140–141 |
| **6.** p. 128 | **13.** pp. 132–133 | **20.** pp. 140–141 |
| **7.** p. 128 | **14.** pp. 133–135 |  |