Review for Unit 2 Exam KEY

Gross Domestic Product

1. What are the components of GDP? What kinds of transactions fall in each category?
2. What is/is not included in GDP?
3. Define *real GDP*. What is the difference between nominal GDP and real GDP?
4. Calculate nominal GDP, real GDP, and the change in GDP.
5. What is the difference between GDP and GDP per capita? What does each measure?

Business Cycle

6. Define *peak* and *trough.*
7. Recognize peaks and troughs in written and visual representations of the business cycle.
8. What are the phases of the business cycle and how these are determined?
9. What is the relationship between GDP and unemployment?
10. What happens when there are increases/decreases in one sector of the circular flow model?

Unemployment

11. Define *labor force*. Who makes up this group?
12. Define *unemployed.* What groups are included/not included?
13. Determine labor force participation rate.
14. Determine the unemployment rate.
15. What are the criticisms of unemployment rate statistics?
16. Categorize scenarios in terms of types of unemployment.
17. Define *natural rate of unemployment.*
18. Calculate the natural rate of unemployment.
19. How would the imposition of a minimum wage affect unemployment?

Inflation

20. What are the results of inflation (including winners and losers)?
21. Categorize scenarios in terms of types of inflation costs.
22. Calculate the real wage and explain impact of inflation change.
23. Calculate CPI and the change in CPI.
24. Why are some government programs indexed to the CPI?

Practice Questions

1. For each of the following identify if it is included or excluded in the calculation of GDP. If included, state which component, and if excluded, why?
    a. A used economics textbook from the bookstore Excluded; used good
    b. New harvesting equipment for the farm Included; Investment spending (new physical capital)
    c. 1,000 shares of stock in a computer firm Excluded; does not represent production
    d. A car produced in a foreign country Excluded; Import
    e. A chocolate bar purchased at a convenience store Included; Consumption spending
    f. An Army retirement check sent to an injured veteran Excluded; government transfer
    g. Homework help provided by a teacher to her own child Excluded; nonmarket transaction
    h. A construction company receiving state of Texas funds for expanding a roadway Included; Government spending
    i. The sale of American-made products in Mexico Included; Exports
    j. A book publisher buys paper that will be used to print books Excluded; intermediate good

Calculating GDP for Year 2008			
Rent	$2,400	Taxes	$4,265
Consumption Spending	$7,900	Exports	$800
Social Security Benefits	$6,100	Government Purchases	$2,600
Investment Spending	$2,100	Imports	$1,200
Wages and Salaries	$6,500	Purchase of Stocks	$6,300

2. Use the information above to calculate nominal GDP for year 2008.
   Use expenditures model to solve for GDP. GDP = C + I + G + E – I; 7,900 + 2,100 + 2,600 (800 – 1,200) = $12,200
3. If the price index in a country were 100 for the year 2000 and 120 for 2003 and nominal gross domestic product in 2003 were $480 billion, then real gross domestic product for 2003 in 2000 dollars would be ___$400 million___.

   480 x100
   120

4. Consider an economy that only produces two goods: DVDs and DVD players. Last year, 10 DVDs were sold at $20 each and 5 DVD players were sold at $100 each, while this year 150 DVDs were sold at $10 each and 10 DVD players were sold at $60 each. Real GDP for this year using last year as the base year is _____$4,000_____.

Hint: It may be helpful to transfer the information in this word problem to a table.

	DVDs		DVD Players	
	Quantity	Price	Quantity	Price
Last Year	10	20	5	100
This Year	150	10	10	60

Real GDP for this year = (150 x 20) + (10 x 100) = $4,000

Use this table to answer questions 5 and 6.

Product	2008 Output	2008 Prices (base year)	Product	2009 Output	2009 Prices
Peanut Butter	200 units	$1 per unit	Peanut Butter	250 units	$1.00 per unit
Jelly	100 units	$2 per unit	Jelly	100 units	$2.50 per unit

2008 nominal GDP = (200 x 1) + (100 x 2) = $400   2009 nominal GDP = (250 x 1) + (100 x 2.5) = $500

5. A simple economy produces only peanut butter and jelly. Using the data in the table, nominal GDP in 2009 was ____$500____ and real GDP in 2009 was _$450____. *Use 2008 as the base year

   2009 real GDP = (250 x 1) + (100 x 2) = $450

6. Using the data in the table, from 2008 to 2009 real GDP (increased/decreased) by _____12.5_____%.

   $\frac{450 - 400}{400}$ x 100 = 12.5%

7. Suppose you are told that Hawk Nation produces three goods: tennis shoes, basketballs, and lawn mowers. The following table provides information about the prices and output for these three goods for the years 2010, 2011, and 2012.

Year	Price of tennis shoes	Quantity of tennis shoes	Price of basketballs	Quantity of basketballs	Price of lawn mowers	Quantity of lawn mowers
2010	$50	100	$10	200	$100	10
2011	52	108	10	205	100	12
2012	54	115	10	212	110	12

a. Use the previous information to fill in the following table.

Year	Nominal GDP
2010	$8,000
2011	$8,866
2012	$9,650

To calculate nominal GDP, multiply the price of each good times the quantity produced of that good and then sum together these products. For example, nominal GDP in 2010 = (price of tennis shoes)x(quantity of tennis shoes) + (price of basketballs)x(quantity of basketballs) + (price of lawn mowers)(quantity of lawn mowers) = $8,000

GDP Growth Rate = $\frac{\text{Year 2} - \text{Year 1}}{\text{Year 1}}$ x 100

b. What is the percentage change in nominal GDP from 2010 to 2011? (8,866—8,000/8,000) x 100 = 10.83%
c. What was the percentage change in nominal GDP from 2011 to 2012? (9650—8,866/8,866) x 100 = 8.84%
d. Use 2010 as the base year to fill in the following table.

Year	Real GDP
2010	$8,000
2011	$8,650
2012	$9,070

To calculate real GDP, multiply price of each good in base year (2010) times quantity of that good produced in a given year and then sum up together.

    e. What was the percentage change in real GDP from 2010 to 2011? (8650—8000/8000) x 100 = 8.13%

    f. What was the percentage change in real GDP from 2011 to 2012? (9,070 –8,650/8,650) x 100 = 4.86%

    g. Use 2010 as the base year to fill in the following table.

Year	GDP deflator
2010	(8000/8000) x 100 = 100
2011	(8866/8650) x 100 = 102.50
2012	(9650/9070) x 100 = 106.39

GDP Deflator: a price index used to adjust nominal GDP to real GDP * Base year will always be 100

$$= \frac{\text{nominal GDP}}{\text{real GDP}} \times 100$$

8. Money (gains/loses) purchasing power in periods of high inflation. Money (gains/loses) purchasing power in periods of low inflation (technically this should say deflation to be correct).

9. In Birdvilleland, the price index is based upon a market basket consisting of 10 apples, 2 pizzas, and 5 ice cream cones. You are given prices for these three items for 2010, 2011, and 2012 in the following table.

Year	Price of apples	Price of pizzas	Price of ice cream cones
2010	$0.50	$4.00	$1.00
2011	0.52	3.85	1.10
2012	0.49	3.90	1.30

    a. Fill in the following table using 2010 as your base year.

Year	Cost of market basket	CPI
2010	(10 x .50) + (2 x 4.00) + (5 x 1.00) = $18.00	(18/18) x 100 = 100
2011	(10 x .52) + (2 x 3.85) + (5 x 1.10) = $18.40	(18.4/18) x 100 = 102
2012	(10 x .49) + (2 x 3.90) + (5 x 1.30) = $19.20	(19.2/18) x 100 = 107

    b. Use the information you calculated in part a to calculate the rate of inflation between 2010 and 2011.
(102 – 100)/100 x100 = 2%

    c. Use the information you calculated in part a to calculate the rate of inflation between 2011 and 2012.
(107 – 102)/10 x100 = 5%

10. An individual takes out a bank loan with an 8% rate of interest with the expectation that inflation over the course of the loan will be roughly 3%. If the inflation rate is greater than 3%, the (bank/borrower) benefits because ____they will pay back their loan to the bank with less purchasing power than the value of the original loan_____. If the inflation rate is less than 3%, the (bank/borrower) benefits because ___they will receive payment from the borrower that holds greater purchasing power than the value of the original loan_____.

11. Which type of inflation cost does each of the following represent:

    a. Because the value of money is decreasing so rapidly, Bob keeps going to the bank to trade in his cash for gold. Shoe-leather cost

    b. Because a bank offered loans at a very low fixed rate of interest right before a period of high inflation, they lost money on all of those loans. Unit-of-account cost

    c. Joe has to keep changing prices at his gas station due to rapidly changing fuel prices. Menu cost

12. The cost of a market basket is $150 in Year 1, $120 in Year 2, and $200 in Year 3. Using a Year 3 base, the price index for Year 1 is _____ and the price change is ____%. The price index for Year 2 is _____ and the price change is ____%.

$\frac{150}{200}$ x 100 = 75 $\frac{75 – 100}{100}$ X 100 = --25% $\frac{120}{200}$ x 100 = 60; $\frac{60-100}{100}$ x 100 =--40%

13. If nominal wages have risen by 50% over a ten-year period and aggregate prices have increased by 40% in that same period, then we can safely conclude that the real wages of workers have (increased/decreased/not changed) by __10_%.

14. In a typical business cycle, the trough is immediately followed by _____expansion_____. The business cycle peak is typically immediately followed by _____recession_____.

15. Economic expansion is typically associated with a (falling/rising) inflation rate and a (falling/rising) unemployment rate. Economic contraction (recession) is typically associated with a (falling/rising) inflation rate and a (falling/rising) unemployment rate.

16. If a country has a working-age population of 200 million, 135 million people with jobs, and 15 million people unemployed and seeking employment, the labor force participation rate is _75_% and the unemployment rate is _10_%.

    LFPR = (135 + 15) x 100 = 75%   UR = ___15____ x 100 = 10%
              200   (135 + 15)

17. Suppose the Bureau of Labor Statistics posted unemployment statistics for this quarter as follows: frictional unemployment 3%, structural unemployment 2%, and cyclical unemployment 2.5%. We could calculate the unemployment rate to be _7.5_% and the natural rate of unemployment to be _5_%.

    UR = 3 + 2 + 2.5   NRU = 3 + 2

18. Which one(s) of the following individuals would be considered unemployed?
    d. A college student who is neither working nor looking for work No; institutionalized
    e. A construction worker who has a part-time job and would prefer to have a full-time job No; underemployed is still employed
    f. An accountant who reads the newspaper jobs section and mails her resume to accounting firms Yes; searching
    g. A recent college graduate who received a job offer but hasn't started working yet No; not looking for a job
    h. A stay-at-home mom No; not searching
    i. A teacher who lost his job in a round of layoffs over a year ago, and who has now stopped looking for work No; discouraged worker

19. Categorize the following individuals in terms of the type of unemployment (structural, frictional, or cyclical):
    j. A geologist who is permanently laid off from an oil company due to a change in company policy Structural
    k. A teacher who leaves one school district to search for a job at a school closer to her home Frictional
    l. A customer support representative who loses his job when his company begins outsourcing to India Structural
    m. A banker who loses her job because of a recession Cyclical

20. The accompanying table provides data on the size of the labor force and the number of unemployed workers for different regions of the U.S.

	Labor force (thousands)		Unemployed (thousands)	
Region	March 2007	March 2008	March 2007	March 2008
Northeast	27,863.5	28,035.6	1,197.8	1,350.3
South	54,203.8	54,873.9	2,300.9	2,573.8
Midwest	34,824.3	35,048.6	1,718.2	1,870.8
West	35,231.8	35,903.3	1,588.0	1,914.4

a. Calculate the number of workers employed in each of the regions in March 2007 and March 2008. ~~Use your answers to calculate the change in the total number of workers employed between March 2007 and March 2008.~~ *Don't worry about doing this part.

Employed = Labor Force – Unemployed

Region	March 2007	March 2008
Northeast	26,665.7	26,685.3
South	51,902.9	52,300.1

Midwest	33,106.1	33,177.8
West	33,643.8	33,988.9

b. For each region, calculate the growth in the labor force from March 2007 to March 2008.

Labor Force Growth Rate = LF March 2008 – LF March 2007 x 100
LF March 2007

Northeast = (28,035.6 – 27,863.5/27,863.5) x 100 = 0.62% growth

South = (54,873.9 – 54,203.8/54,203.8) x 100 = 0.12% growth

Midwest = (35,048.6 – 34,824.3/34,824.3) x 100 = 0.64% growth

West = (35,903.3 – 35,231.8/35,903.3) x 100 = 0.19% growth

c. Compute unemployment rates in the different regions of the country in March 2007 and March 2008.

UR = (Unemployment/Labor Force) x 100

	March 2007	**March 2008**
Northeast	4.3%	4.8%
South	4.2%	4.7%
Midwest	4.9%	5.3%
West	4.5%	5.3%