Faculté des sciences sociales | Faculty of Social Sciences

uOttawa

Département de science économique
Department of Economics

**INTRODUCTION TO MACROECONOMICS**
**(ECO1102 , WINTER 2015)**

**Midterm exam**
**Instructor: Octavian Strîmbu**

## Part 1: Multiple-Choice Questions

**Grading: 30 questions, 2 points per correct answer (maximum total score: 60 points)**

1. When evaluating differences or similarities between an increase in supply and an increase in quantity supplied, what do we know?
   a. The former is a shift of the curve and the latter is a movement along the curve.
   b. The former is a movement along the curve and the latter is a shift of the curve.
   c. Both are shifts of the supply curve.
   d. Both are movements along the curve.

Answer: A

2. Wheat is the main input in the production of flour. All else equal, if the price of wheat decreases, what would we expect?
   a. the supply of flour to decrease
   b. the demand for flour to decrease
   c. the supply of flour to increase
   d. the demand for flour to increase

Answer: C

3. If two goods are complements, what happens if there is a decrease in the price of one good?
   a. It increases the quantity demanded of the other good.
   b. It reduces the demand for the other good.
   c. It reduces the quantity demanded of the other good.
   d. It raises the demand for the other good.

Answer: D

4. If a shortage exists in a market, what do we know?
   a. The actual price is below equilibrium price, and quantity demanded is greater than quantity supplied.
   b. The actual price is above equilibrium price, and quantity demanded is greater than quantity supplied.
   c. The actual price is above equilibrium price, and quantity supplied is greater than quantity demanded.
   d. The actual price is below equilibrium price, and quantity supplied is greater than quantity demanded.

Answer: A

5. What is the relationship between income and expenditure for an economy?
    a. Income is greater than expenditure.
    b. Income is less than expenditure.
    c. Income equals expenditure.
    d. Income could be greater or less than expenditure.

Answer: C

6. Which of the following is included in the investment component of GDP?
    a. purchases of previously owned homes
    b. purchases of government bonds
    c. purchases of new cars
    d. purchases of new houses

Answer: D

7. A Manitoba farmer buys a new tractor made in Alberta by a German company. What is the impact on investment and GDP?
    a. Canadian investment and German GDP increase, but Canadian GDP is unaffected.
    b. Canadian investment and GDP increase, but German GDP is unaffected.
    c. Canadian investment, Canadian GDP, and German GDP are unaffected, because tractors are intermediate goods.
    d. Canadian investment, Canadian GDP, and German GDP all increase.

Answer: B

8. A firm produces consumer goods and adds some to inventory in the third quarter. In the fourth quarter, the firm sells the goods at a retail outlet. As a result of these actions, what happens to the consumption and investment components of GDP in the fourth quarter?
    a. investment decreases, consumption does not change
    b. investment increases, consumption decreases
    c. investment decreases, consumption increases
    d. investment does not change, consumption increases

Answer: C

9. Which of the following represents a transfer payment?
    a. You transfer $1000 from your bank account to a mutual fund.
    b. The bank transfers $10 quarterly interest to your savings account.
    c. The government sends your grandfather his pension cheque.
    d. Your employer automatically transfers $100 each month from your wages to a nontaxable medical spending account.

Answer: C

10. What is the difference between nominal and real GDP?
    a. Nominal GDP values production at current prices, while real GDP values production at constant prices.
    b. Nominal GDP values production at constant prices, while real GDP values production at current prices.
    c. Nominal GDP values production at market prices, while real GDP values production at the cost of the resources used in the production process.
    d. Nominal GDP consistently underestimates the value of production, while real GDP consistently overestimates the value of production.

Answer: A

11. Suppose an economy produces only wheat and rice. Last year, 20 bushels of wheat are sold at $4 per bushel, and 10 bushels of rice are sold at $2 per bushel. If the price of wheat was $2 per bushel and the price of rice was $1 per bushel in the base year, what can we conclude?
    a. Nominal GDP is $100, real GDP is $50, and the GDP deflator is 50.
    b. Nominal GDP is $100, real GDP is $50, and the GDP deflator is 200.
    c. Nominal GDP is $50, real GDP is $100, and the GDP deflator is 200.
    d. Nominal GDP is $50, real GDP is $100, and the GDP deflator is 50.

Answer: B

**Table 1**

Consider the following table for the country of Ophir:

| Year | Nominal GDP | GDP Deflator |
|---|---|---|
| 2011 | $4000 | 100 |
| 2012 | $4100 | 105 |
| 2013 | $4200 | 110 |

12. Refer to the Table 1. What can we conclude about real GDP from this information?
    a. Real GDP was higher in 2013 than in 2012, and real GDP in 2012 was higher than in 2011.
    b. Real GDP was higher in 2012 than in 2011, and real GDP in 2012 was higher than in 2013.
    c. Real GDP was higher in 2011 than in 2012, and real GDP in 2012 was higher than in 2013.
    d. Real GDP was higher in 2011 than in 2012, and real GDP in 2012 was higher than in 2011.

Answer: C

13. Which of the following defines recessions?
    a. higher prices
    b. increased profits
    c. higher employment
    d. falling real GDP

Answer: D

14. How does a rise in the consumer price index affect a typical family?
    a. The typical family has to spend more dollars to maintain the same standard of living.
    b. The typical family can spend fewer dollars to maintain the same standard of living.
    c. The typical family finds that its standard of living is not affected.
    d. The typical family can offset the effects of rising prices by saving more.

Answer: A

15. What is the basket of goods used to construct the CPI?
    a. a random sample of all goods and services produced in the economy
    b. the goods and services typically bought by consumers, according to Statistics Canada surveys
    c. goods and services weighted by the ratio of expenditures on them relative to the consumption component of GDP
    d. the least and the most expensive goods and services in each major category of consumer expenditures

Answer: B

**Table 2**

| Year | Peaches | Pecans |
|---|---|---|
| 2012 | $14 per bushel | $9 per bushel |
| 2013 | $12 per bushel | $14 per bushel |

16. Refer to the Table 2. Suppose that the typical consumer basket consists of 5 bushels of peaches and 10 bushels of pecans and that the base year is 2012. What is the consumer price index for 2012?
    a. 100
    b. 125
    c. 160
    d. 200

Answer: A

17. Refer to the Table 2. Suppose that the typical consumer basket consists of 5 bushels of peaches and 10 bushels of pecans and that the base year is 2012. What is the consumer price index for 2013?
    a. 80
    b. 100
    c. 125
    d. 200

Answer: C

18. Refer to the Table 2. What was the inflation rate in 2013?
    a. 25 percent
    b. 20 percent
    c. 5 percent
    d. 4 percent

Answer: A

19. Which change in the price index shows the greatest rate of inflation?
    a. 100 to 110
    b. 150 to 170
    c. 180 to 189
    d. 220 to 235

Answer: B

20. What does "substitution bias" in the consumer price index refer to?
    a. replacing old goods with new goods in consumer purchases
    b. replacing low-quality goods with high-quality goods in consumer purchases
    c. replacing expensive goods with cheaper goods in consumer purchases
    d. replacing old-design goods with technologically advanced goods in consumer purchases

Answer: C

21. If the prices of Australian-made shoes imported into Canada increase, what happens to the GDP deflator and the CPI?
    a. The GDP deflator does not change; the CPI decreases.
    b. The GDP deflator decreases; the CPI increases.
    c. The GDP deflator and the CPI decrease.
    d. The GDP deflator does not change; the CPI increases.

Answer: D

22. Suppose that the CPI is currently 200 and was 40 in 1950. Then, according to the CPI, $1 in 1950 purchased the same amount of goods and services as what amount today?
    a. $5
    b. $4
    c. $3
    d. $0.2

Answer: A

23. Which of the following best describes the relationship between inflation and interest rates?
    a. There is no relationship between inflation and interest rates.
    b. The interest rate is determined by the rate of inflation.
    c. In order to fully understand inflation, we need to know how to correct for the effects of interest rates.
    d. In order to fully understand interest rates, we need to know how to correct for the effects of inflation.

Answer: D

24. Which of the following statements best describes the relationship between the initial wealth and the growth rate of a country?
    a. Countries with the highest growth rates over the past 100 years are the ones that had the highest level of real GDP 100 years ago.
    b. Countries that were rich a century ago had little fluctuation around their average growth rates during the past 100 years.
    c. Though the catch-up effect may suggest otherwise, the data show no strong relationship between initial conditions and growth rates.
    d. Over the past 100 years, Japan had the highest real GDP growth rate, and now it has the highest real GDP per person.

Answer: C

25. Which of the following best defines productivity?
    a. Productivity is the ability of a company to generate profit.
    b. Productivity is the quantity of goods and services that a nation can produce in a year.
    c. Productivity is the quantity of goods or services that a worker can produce in one hour.
    d. Productivity is the ability of a company to produce goods and services.

Answer: C

26. Which of the following is a direct determinant of productivity?
    a. human capital
    b. wage
    c. price of output
    d. unemployment rate

Answer: A

27. Which of the following is considered human capital?
    a. better working conditions
    b. safety in the workplace
    c. the things you have learned this semester
    d. machinery that requires a human to operate

Answer: C

28. As discussed in class, people face tradeoffs. The growth that arises from capital accumulation is not a free lunch. What is the opportunity cost of that capital accumulation?
    a. People need to work longer hours, thus having less time for leisure.
    b. People need to consume less goods and services now in order to enjoy more consumption in the future.
    c. People need to recycle resources so that future generations can produce goods and services with the accumulated capital.
    d. People need to devote less time in school and more at work.

Answer: B

29. What does diminishing returns to capital imply?
    a. Capital produces fewer goods as it ages.
    b. New ideas are not as useful as old ideas.
    c. Increases in the capital stock eventually decrease output.
    d. Increases in the capital stock increase output by ever smaller amounts.

Answer: D

30. Which of the following is an externality aspect of education?
    a. Education produces a return to society that is greater than the return to the individual.
    b. Education produces a return to society that is less than the return to the individual.
    c. Education produces costs to society that are greater than the costs to the individual.
    d. Education produces costs to the individual that are greater than the costs to society.

Answer: A

## Part 2: Short Answer Questions

**<u>Question 1: Growth</u>**

A puzzle: The share of GDP devoted to investment was similar for Canada and South Korea over the period 1960–1990. However, South Korea had a 7 percent growth rate of average annual income, while Canada had only a 2.5 percent growth rate. How can this be explained? (**10 points**)

*The solution to the puzzle is based on the concept of diminishing returns to capital. A country that has a lot of income, and so a lot of capital, gains less by adding more capital than does a country that currently has little capital. It is easy to envision how a capital poor country could increase its output considerably with even a little more capital.*

**<u>Question 2: Inflation vs. interest rates</u>**

Jay and Joyce meet George, the banker, to work out the details of a mortgage. They all expect that inflation will be 2 percent over the term of the loan, and they agree on a nominal interest rate of 6 percent. As it turns out, the inflation rate is 5 percent over the term of the loan.

Question 2a: What was the expected real interest rate? (**4 points**)

*The expected real interest rate was 4 percent.*

Question 2b: What was the actual real interest rate? (**4 points**)

*The actual real interest rate was 1 percent.*

Question 2c: Who benefitted and who lost because of the unexpected inflation? Justify your answer carefully (**7 points**).

*George, the banker, lost because he receives less real interest income than he expected. Jay and Joyce gain because they pay less real interest expense than they expected.*

**<u>Question 3: Measuring a nation's income</u>**

Sean is watching a news report with his father. The news anchor points out that a certain troubled Caribbean nation generates a GDP per person of only 5000 CAD per year. Because Sean's father knows GDP in Canada is approximately 50000 CAD per person, he suggests Canadians are materially 10 times better off in Canada than in the Caribbean nation.

Question 3a: Is the father's statement accurate? (**2 points**)

*No.*

Question 3b: What general category of production is not captured by GDP in both Canada and the Caribbean nation? (**4 points**)

*Nonmarket activities (items produced and consumed at home AND items produced and sold illegally).*

Question 3c: Provide some examples of this type of activity. (**4 points**)

*Household production done without pay such as gardening, cleaning, sewing, home improvement or construction, child supervision. Also illicit activities: selling illegal drugs.*

Question 3d: Why would the exclusion of this type of production affect the measurement of Caribbean output more than Canadian output? Justify your answer carefully (**5 points**)

*A greater proportion of the output produced by less-developed nations is nonmarket output; that is, it is NOT sold and recorded as a market transaction.*