Fraser International College

Economics 105 Midterm Exam I (Fall 2023)

Instructor: Jiamin. Liu

39

Name: Weiqi Wang Preferred Name:

FIC Student ID: WANW701903

Please indicate your lecture day:

Monday morning (1)	[ ]	Monday afternoon (2)	[ ]
Tuesday morning (3)	[ ]	Tuesday afternoon (4)	[√]

Instructions:

1. Please do not open the exam until you are asked to or you will get 2 points deducted as your penalty.
2. There are 20 multiple choice questions that are 0.5 point each, totaling 10 points. Please put your answers on the table provided on page 3. Answers on the questions not on the table will not be graded.
3. There are 4 short answer questions totaling 40 points as indicated on each question. Please provide all the steps and explanations. No point will be given without explanations.
4. All the questions must be answered in the exam sheet. No marks will be deducted for incorrect answers. The total number of marks available is 50.
5. Time allowed is 1.5 hours.
6. Answers written in pencil and whiteouts are NOT eligible for remark.
7. Page 2 and 12 serve as draft papers, there are no extra paper provided during the exam and you are not allowed to use your own paper, please use page 2 on this exam booklet wisely.
8. For all your final answers with non-integers, please keep 2 decimal places.
9. Good luck!

Place Answers to the Multiple Choice Questions in the Chart Below
Fill in the space that corresponds to the correct answer.

Question	A	B	C	D
1				√
2				√
3		√		
4	√			
5				√
6	√			
7			√	
8			√	
9			√	
10	√			
11				√
12	√			
13	√			
14	√			
15		√		
16				√
17		√		
18				√
19		√		
20				√

9

Section I: Multiple Choice Questions

Multiple Choice

Identify the choice that best completes the statement or answers the question.

d 1. Which of the following would NOT be considered a factor of production?
   a. labour
   b. land
   c. capital
   d. money

d 2. When constructing a production possibilities frontier, which of the following is NOT an assumption?
   a. The economy produces only two goods.
   b. All the economy's factors of production are being used.
   c. The economy has a fixed level of technology.
   d. The economy may increase its available factors of production.

b 3. Suppose a nation is currently producing at a point inside its production possibilities frontier. What do we know?
   a. The nation is producing beyond its capacity, and inflation will occur.
   b. The nation is not using all available resources and is inefficient.
   c. The nation is producing an efficient combination of goods.
   d. There will be a large opportunity cost if the nation tries to increase production.

a 4. What would unemployment cause an economy to do?
   a. produce inside its production possibilities frontier
   b. produce on its production possibilities frontier
   c. produce outside its production possibilities frontier
   d. cause many different scenarios on its production possibilities frontier depending on its severity

d 5. What does microeconomics study?
   a. the behaviour of consumers
   b. how individual households and firms make decisions
   c. how government affects the economy
   d. how the economy as a whole works

a 6. In a pie chart, what does each "slice" of the pie represent?
   a. a specific percentage of the total pie
   b. an equal share of the total pie
   c. the amount of the pie each of the two variables represents
   d. one-half of the total pie

c 7. A German citizen buys an automobile produced in Canada by a Japanese company. What happens as a result?
   a. Canadian net exports increase, Canadian GNP and GDP are unaffected, Japanese GNP increases, German net exports decrease, and German GNP and GDP are unaffected. X
   b. Canadian net exports, GNP, and GDP increase; Japanese GDP increases; German net exports decrease; and German GDP is unaffected. X
   c. Canadian net exports and GDP increase, Japanese GNP increases, German net exports decrease, and German GDP and GNP are unaffected.
   d. Canadian net exports, GNP, and GDP are unaffected; Japanese GNP increases; German net exports decrease; and German GDP and GNP decrease. X

C 8. In sequence, what are the steps involved in calculating the consumer price index and the inflation rate?
   a. Choose a base year, determine the basket, compute the index, compute the basket's cost, and compute the inflation rate.
   b. Choose a base year, find the prices, determine the basket, compute the basket's cost, and compute the inflation rate.
   c. Determine the basket, find the prices, compute the basket's cost, choose a base year and compute the index, and compute the inflation rate.
   d. Determine the basket, find the prices, compute the index, choose a base year, and compute the inflation rate.

Table 6-2

Year	Price of pork (3)	Price of corn (4)
2012	$20	$12
2013	$25	$18

$108
$147

C 9. Refer to the Table 6-2. Suppose that the basket of goods in the CPI consisted of 3 units of pork and 4 units of corn. What is the consumer price index for 2013 if the base year is 2012?
   a. 120.00
   b. 109.22
   c. 136.11
   d. 150.00

a 10. The price index in the first year is 125, in the second year is 150, and in the third year is 200. What is the inflation rate between the first and second year and between the second and third year?
   a. 20 percent between the first and second year, 33 percent between the second and third year
   b. 25 percent between the first and second year, 75 percent between the second and third year
   c. 25 percent between the first and second year, 50 percent between the second and third year
   d. 50 percent between the first and second year, 100 percent between the second and third year

d 11. 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. X
   c. The GDP deflator and the CPI decrease. X
   d. The GDP deflator does not change; the CPI increases.

a 12. Suppose that the CPI is currently 400 and was 100 in 1969. Then, according to the CPI, $100 today purchases the same amount of goods and services as what amount in 1969?
   a. $25
   b. $40
   c. $60
   d. $400

a 13. What does the nominal interest rate tell you?
   a. how fast the number of dollars in your bank account rises over time
   b. how fast the purchasing power of your bank account rises over time
   c. the number of dollars in your bank account
   d. the purchasing power of your bank account

$400/person

a 14. In 2012, Freedonia had a population of 2700 and real GDP of about $1 080 000. In 2011, it had a population of 2500 and real GDP of about $1 000 000. What was the approximate growth rate of real GDP per person in Freedonia between 2011 and 2012? $400/person
   a. 0 percent
   b. 2.5 percent
   c. 5 percent
   d. 7.5 percent

b 15. Which of the following is human capital?
   a. breakfasts served in a company's cafeteria
   b. understanding how to use a company's accounting software
   c. computers that show training videos for new corporate employees
   d. the average number of holiday days per year

d 16. In a market economy, what is scarcity of resources most clearly reflected in?
   a. supply
   b. demand
   c. market prices
   d. the stock of the resource

b 17. What is a valid policy to use for increasing the rate of economic growth?
   a. reduce reliance on market forces because they allocate goods and services in an unfair manner
   b. encourage trade with neighbouring countries
   c. increase the fraction of GDP devoted to consumption
   d. restrict investment in domestic industries by foreigners because they take some of the profits out of the country

d 18. Which of the following is the source of most technological progress?
   a. private research by firms and individual inventors
   b. private research by firms and government
   c. government research
   d. government-sponsored research by universities

b 19. All else equal, which of the following would tend to cause GDP per person to rise?
   a. high population growth
   b. investment in human capital
   c. rapid growth in the number of workers
   d. policies to reduce imports

d 20. What do economists call the inputs used to produce goods and services?
   a. productivity indicators
   b. capitalization producers
   c. production functions
   d. factors of production

Section II: Short Answer Questions

Question 1: [10 points in total] True or False. For the correct statements please put down "right" without explanation. For the incorrect statements please put down "wrong" (worth 0.5 point) and explain why it is incorrect.

a) An intermediate good is used as an input to produce a final good.

Right 1

b) The product approach to measuring GDP sums the value added to all the goods and services produced in an economy over a particular time.

Wrong, all the final goods and services, not all the goods and services

c) The expenditure approach measures GDP as total spending on all final goods and services produced in the economy.

Right 1

d) Calculating GDP using the income approach consists of adding up all income received by economic agents contributing to production of final goods.

Wrong, not economic agents, ~~are factitities and not only for final goods~~ 0.5

e) Transfer payments are cash payment made by one individual to another and are not recorded in GDP.

0.5 Wrong. Transfer payments include stocks, loans, lotteries, if one individual make cash payment to another and the other sell a product or service included in GDP, then the cash payment is not a transfer payment

f) One assumption is the CPI is that consumers do not change their purchases when relative prices change.

Right 1

g) The CPI measure of inflation is biased upward because goods that become relatively more expensive receive a lower weight than they should in the CPI measurements.

Wrong, the CPI uses a fixed basket, which cause the weight higher while consumers buy less expensive products.

h) If nominal GDP in 2016 exceeds nominal GDP in 2015, real output must have risen.

Wrong, real output measured by the real GDP, which exclude inflation rate while nominal GDP contains inflation rate.

0.5

i) An increase in real interest rate will encourage borrowings but discourage savings.

Wrong, ~~increase~~ encourage saving and discourage borrowing

1

j) Decreasing returns to capital results in a production function with an increasing slope and thus enable poor countries to catch up with rich countries (the catch-up effect).

Wrong, with a decreasing slope.

1

7.5

Question 2: [12 points in total] Based on the following information, please calculate GDP using the product approach, expenditure approach and income approach.

Consider an economy with a widget producer, consumer, and a government. The widget producer produces 100 million widgets, which sell at a market price of $5 per widget. Consumers purchase 70 million widgets, 10 million are sold to the government, and the remainder are stored as inventory. The widget producers pays $150 million in wages and $40 million in taxes. Consumers pay $30 million in taxes. The government spends all tax revenues to hire workers and purchase widgets as an intermediate good into the production of public infrastructure. The widgets total $50 million and wages total $20 million.

Product Approach

$100 \cdot \$5 = \$500$ millions

(100: products producing)

15

Expenditure Approach

$70 \cdot \$5 + \$150 + \$40 + (\$100 - 70 - 10) \cdot \$5$

(70·$5: con; $150: wage; $40: tax; inventory)

$70 \cdot \$5 + 10 \cdot \$5 + (100-70-10) \cdot \$5 + \$0 = \$500$ millions

(70·$5: consumer consumption; 10·$5: government consumption; (100-70-10)·$5: inventory; $0: net export)

3

Income Approach

$70 \cdot \$5 + 10 \cdot \$5$

(70·$5: consumer consumption; 10·$5: government consumption)

$\$150 + (\$40 + \$30 - \$50 - \$20) + (\$150 - \$30 - 70 \cdot \$5) + \$20$

($150: wage; ($40 + $30 − $50 − $20): government saving; ($150 − $30 − 70·$5) + $20: private saving)

$+ (70 \cdot \$5 + 10 \cdot \$5)$

(70·$5 + 10·$5: producer income)

4.5

Question 3: [9 points in total] imagine an economy produces two goods, coconut and fish. Last year, 40 coconuts were sold for $5 each and 200 units of fish at $2 each. This year, 60 coconuts were sold for $7 each and 300 units of fish at $4 each.

a) Fill in the following table and show your calculations. (3 points)

	Nominal GDP	% increase
Year 1	$600	170%
Year 2	$1620	

last year nominal GDP: $40 \cdot \$5 + 200 \cdot \$2 = \$600$ (40 coconuts, 200 fish)

this year nominal GDP: $60 \cdot \$7 + 300 \cdot \$4 = \$420 + \$1200 = \$1620$ (60 coconuts, 300 fish)

% increase: $\frac{\$1620 - 600}{\$600} \times 100\% = 170\%$

b) Fill in the following table and show your calculations. (6 points)

	Year 1 Real GDP	Year 2 Real GDP	% increase
Year 1 = base year	$600	$900	50%
Year 2 = base year	$1080	$1620	50%

Year 1 = base year:
- Year 1 Real GDP: Year 1 Nominal GDP = $600
- Year 2 Real GDP: $60 \cdot \$5 + 300 \cdot \$2 = \$900$ (60 coconuts, 300 fish)
- % increase: $\frac{\$900 - \$600}{\$600} \times 100\% = 50\%$

Year 2 = base year:
- Year 1 Real GDP: $40 \cdot \$7 + 200 \cdot \$4 = \$1080$ (40 coconuts, 200 fish)
- Year 2 Real GDP: Year 2 Nominal GDP = $1620
- % increase: $\frac{\$1620 - \$1080}{\$1080} \times 100\% = 50\%$

Question 4: [9 points in total] suppose that a borrower and a lender agree on the nominal interest rate of 5% to be paid on the loan, with an expectation that inflation rate will be 2%. Then the inflation rate turns out to be 4%.

a) Is the real interest rate on this loan higher or lower than expected? (2 points)

real interest rate: 5% − 4% = 1%
expected interest rate: 5% − 2% = 3%
1% < 3%, lower

2

b) Does the lender gain or lose from this unexpected high inflation rate? (3 points)

Lose, Because the real interest rate decrease due to the high inflation rate, the power of purchase of the money goes down

3

c) Inflation during the pandemics was much higher than people had expected. How did this affect homeowners who obtained fixed-rate mortgage? How did it affect the banks that lend the money? (4 points)

The homeowners obtained fixed-rate mortage rate are better-off, because fixed-rate mortage is a kind of fixed nominal interest rate, while inflation rate increase higher than people had expected, the real interest rate (nominal interest rate − inflation rate) is lower than expected. Banks are worse-off, and will lends less money or raise the nominal interest rate for new customers.

9