

Economics 101	Name _____
Spring 2011	TA Name _____
4/14/11	Discussion Section # _____
Third Midterm	Student ID # _____

Version 1

**DO NOT BEGIN WORKING UNTIL THE INSTRUCTOR TELLS YOU TO DO SO
READ THESE INSTRUCTIONS FIRST.**

You have 75 minutes to complete the exam. The exam consists of **30 multiple choice questions**. Each question is worth 10/3 points for a total of 100 points.

- **We reserve the right to deduct four points for failing to fill out the scantron completely and accurately and the exam booklet completely and accurately!**
- **Answer all questions on the scantron sheet with a #2 pencil**

NO CELL PHONES, CALCULATORS, OR FORMULA SHEETS ARE ALLOWED.
PICK THE BEST ANSWER FOR EACH QUESTION.

How to fill in the scantron sheet:

1. Print your last name, first name, and middle initial in the spaces marked "Last Name," "First Name," and "MI." Fill in the corresponding bubbles below.
2. Print your student ID number in the space marked "Identification Number." Fill in the bubbles.
3. Write the number of the discussion section you've been attending under "Special Codes" spaces ABC, and fill in the bubbles. You can find the discussion numbers below on this page.
4. Write the version number of your exam booklet under "Special Codes" space D, and fill in the bubble. The version number is on the top of this page.

If there is an error on the exam or you do not understand something, make a note on your exam booklet and the issue will be addressed AFTER the examination is complete. No questions regarding the exam can be addressed while the exam is being administered.

When you are finished, please get up quietly and bring your scantron sheet and this exam booklet to the place indicated by the instructors.

Discussion sections are as follows:

Irina Merkuryeva	Patricia Abbott	Ryan Veiga	Yi Li
Dis 386 Th 16:35	Dis 382 Fr 07:45	Dis 384 Th 16:35	Dis 385 Fr 07:45
Dis 388 Fr 11:00	Dis 383 Fr 09:55	Dis 389 Fr 11:00	Dis 387 Fr 08:50
Dis 390 Fr 08:50	Dis 393 Fr 12:05	Dis 391 Fr 09:55	
Dis 392 Fr 12:05		Dis 394 Fr 13:20	

I, _____, agree to neither give nor receive any help on this exam from other students. Furthermore, I understand that use of a calculator is an academic misconduct violation on this exam.

Signed _____

1. Which of the following industries is perfectly competitive?
 - a. Chocolate industry (There are many companies in the industry and consumers of chocolate view each company's product as unique.)
 - b. Rice industry (There are thousands of farmers producing rice and all the rice is the same from the consumers' perspective.)
 - c. Cellular telephone service (There are a few producers in the industry and each consumer must select one of them to be their provider of cell phone service.)
 - d. University apartment service (There are limited apartments available at the university and consumers of these apartments have distinct preferences as to which apartments they prefer.)

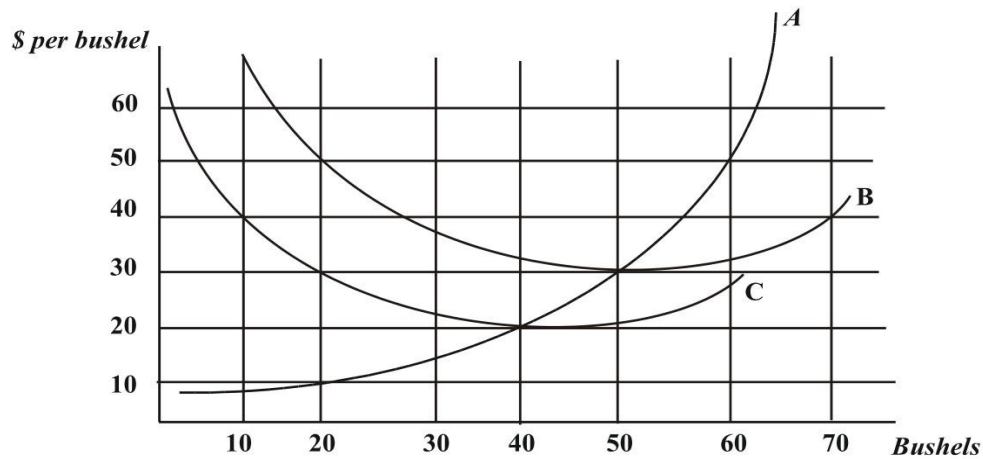
Use the statements below to answer the following two questions:

Consider the following possible combinations of changes in CPI and prices:

- (I) Increase in the CPI, increase in the nominal wage
 - (II) Increase in the CPI, decrease in the nominal wage
 - (III) Decrease in the CPI, increase in the nominal wage
 - (IV) Decrease in the CPI, decrease in the nominal wage
2. Which of the above combinations of changes in the CPI and the nominal wage will *always* lead to an increase in the real wage?
 - a. (II) only
 - b. (III) only
 - c. (I), (II), and (IV) only
 - d. (I), (III), and (IV) only
 3. Which of the following combinations of changes in the CPI and the nominal wage *could* lead to a decrease in the real wage?
 - a. (II) only
 - b. (III) only
 - c. (I), (II), and (IV) only
 - d. (I), (III), and (IV) only

Use the following information to answer the next **four** questions.

This graph shows the cost functions of Moe's mushroom gathering business, which is a firm operating in a perfectly competitive market.



4. Which of the following statements is true?
 - a. If marginal cost increases as output increases, then average total cost must also be increasing.
 - b. If average total cost increases as output increases, then marginal cost must also be increasing.
 - c. If average total cost decreases as output increases, then average variable cost must also be decreasing.
 - d. As output increases, average total cost is always increasing.
 - e. None of the above statements is true.
5. In the graph above, the average variable cost curve is labeled _____, the average total cost curve is labeled _____, and the marginal cost curve is labeled _____.
 - a. A; B; C
 - b. C; B; A
 - c. B; C; A
 - d. C; A; B
 - e. B; A; C
6. The curve labeled A is upward sloping because
 - a. there are high fixed costs.
 - b. the first bushels of mushrooms are the easiest to find, but Moe has to really hunt to find additional mushrooms
 - c. increased demand for mushrooms has increased the quantity supplied of mushrooms.
 - d. supply has shifted to the left.
 - e. Moe is operating in the long run.
7. What is the average fixed cost at quantity 20?
 - a. \$40 per unit of output
 - b. \$30 per unit of output
 - c. \$20 per unit of output
 - d. \$10 per unit of output

Use the following information to answer the next four questions.

A phone company uses only equipment and workers to provide service.

Labor	Equipment	Output (units)
2	1	0.5
4	1	1
6	1	4
8	1	8
10	1	9

8. Suppose that equipment costs \$10 per unit and each worker earns \$5. Average Variable Cost is minimized when output is approximately
 - a. 1 unit
 - b. 4 units
 - c. 8 units
 - d. 10 units
 - e. more than 10 units
9. Suppose that all companies in this industry have identical costs to this company and each company is producing 4 units of the service. Furthermore, suppose that the market price of the service is \$12 per unit. Holding everything else constant, we can predict that
 - a. the number of firms in the industry is stable.
 - b. some of the firms in the industry will exit the industry.
 - c. new firms will enter the industry.
 - d. the market price customers pay for telephone service must increase.
 - e. the wage of the workers employed in the telephone industry must increase.
10. If the price of equipment increased to \$20 and nothing else changed
 - a. Total Cost would increase by \$10 per unit of output.
 - b. Marginal Cost would increase by \$20 divided by units of output.
 - c. Average Variable Cost would increase by \$20 divided by units of output.
 - d. Marginal Cost would not change.
 - e. Average Total cost would increase by \$10 at each level of output.
11. For this firm, which of the following statements is true about the marginal cost curve? The marginal cost curve
 - a. Equals Average Variable Cost at Average Variable Cost's minimum point.
 - b. Equals Average Total Cost at Average Total Cost's maximum point.
 - c. Is always greater than Average Variable Cost.
 - d. Is always less than Average Variable Cost.
 - e. The curve representing Marginal Cost for this firm is always upward sloping as output increases.

Use the following information for the next two questions:

Consider the nation of Econburg. Use the following table to answer the next two questions about prices and inflation in Econburg (using a scale factor of 100):

Year	Price of Market Basket	CPI (Base Year 1990)	CPI (Base Year 2000)
1990	\$125	100	
2000			100

12. What CPI in 2000 (using 1990 as the base year) would imply that the cost of the market basket in 2000 was \$75?
- 500/3
 - 400/3
 - 60
 - 75
13. What price of the market basket in 2000 would give a CPI of 50 for 1990 if the base year is 2000?
- 200
 - 250
 - 300
 - None of the above

Use the following information for the next two questions:

Suppose you want to compare the prices and wages in 2010 with what they were back in 1910. You collect the following data:

Year	Price of Market Basket	Price of Gas	Price of Haircuts	Nominal Wage Per Hour
1910	\$50	\$0.25	\$2.50	\$0.50
2010	\$400	\$4.00	\$20.00	\$8.00

14. Using 1910 as the base year, which of the following statements about the real price of gas and the real price of haircuts in 2010 is **FALSE**?
- The real price of gas in 2010 is \$0.50.
 - The percent change in the real price of gas from 1910 to 2010 was 100%.
 - The real price of haircuts in 2010 is the same as it was in 1910.
 - The real price increase of haircuts from 1910 to 2010 was \$2.50 (in 1910 dollars).
15. What was the change in the real wage between 1910 and 2010 in terms of 2010 dollars?
- The real wage increased by \$.50 between 1910 and 2010.
 - The real wage decreased by \$.50 between 1910 and 2010.
 - The real wage increased by \$4.00 between 1910 and 2010.
 - The real wage decreased by \$4.00 between 1910 and 2010.

Use the following information to answer the next two questions.

Suppose Jimmy and Beth consume only peanut butter and jelly sandwiches (PBJ's) and carrots. The price of a PBJ is \$2 and the price of a carrot is \$1. Currently, Jimmy's marginal utility from PBJ's is 5; while Beth's marginal utility from PBJ's is only 3. They are each maximizing their utility by consuming 5 PBJ's and an unknown number of carrots (that is greater than zero).

16. If Beth's current income is \$16 per week, how many carrots must she be consuming?
- a. 4 carrots
 - b. 5 carrots
 - c. 6 carrots
 - d. 7 carrots
17. Beth's marginal utility from carrots must be _____ and Jimmy's marginal utility from carrots must be _____.
- a. 1.5; 2.5
 - b. 3; 6
 - c. 1; 3.5
 - d. 1; 4

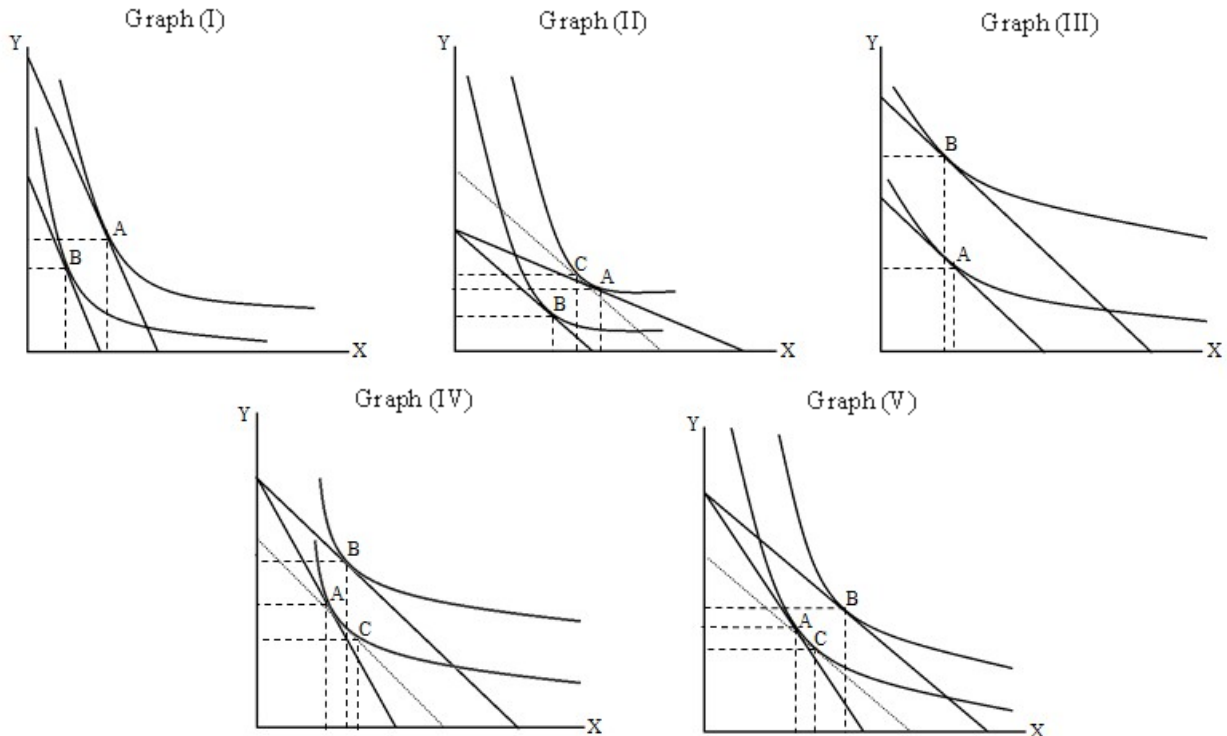
Use the statements below to answer the following question:

Suppose that Arnold Palmer is currently maximizing his utility by purchasing lemonade and sweet tea.

- (I) His marginal utility of sweet tea must be equal to his marginal utility from lemonade.
 - (II) His marginal utility of sweet tea divided by the price of lemonade must be equal to his marginal utility of lemonade divided by the price of sweet tea.
 - (III) His marginal utility of sweet tea divided by the price of sweet tea must be equal to his marginal utility of lemonade divided by the price of lemonade.
 - (IV) Given a graph of his preferences with lemonade on the horizontal axis, the slope of the indifference curve at the utility maximization point is equal to $(-\text{Price of lemonade} / \text{Price of sweet tea})$.
 - (V) Given a graph of his preferences with lemonade on the horizontal axis, the slope of the indifference curve at the utility maximization point is equal to $(-\text{Price of sweet tea} / \text{Price of lemonade})$.
18. Of the above statements, _____ true.
- a. only (I) is
 - b. only (III) is
 - c. only (III) and (IV) are
 - d. only (III) and (V) are
 - e. only (II), (IV), and (V) are

Use the following graphs to answer the next three questions.

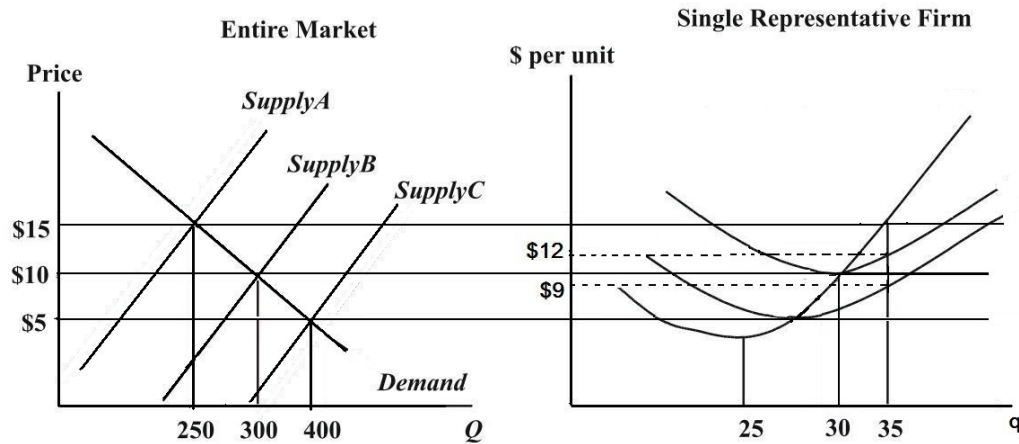
The points A, B, and C correspond to the notation used in class (i.e. A is the original bundle and B is the new bundle after the change). Bundles A, B and C all represent consumption bundles that represent a utility maximization given the individual's preferences, income and the prices of good X and good Y. Assume that the budget line that is just tangent to consumption bundle C is a budget line that corresponds to the budget line discussed in class as BL3.



19. In the above graphs, _____ show(s) an increase in the price of good X and _____ show(s) an increase in income.
 - a. (I) and (III); (II), (IV), and (V)
 - b. (II), (IV), and (V); (I) and (III)
 - c. (II); (III)
 - d. (IV) and (V); (I)
20. In which of the graphs is X a normal good?
 - a. (I), (II) and (V)
 - b. (IV) only
 - c. (III) and (V)
 - d. (II), (III), and (V)
21. In which of the graphs is X an inferior good?
 - a. (I) and (II)
 - b. (IV)
 - c. (III) and (V)
 - d. (III) and (IV)

Use the following information to answer the next four questions.

Assume the graph of the single representative firm includes the cost curves: MC, ATC, and AVC.



22. If the market price is \$15, what is the individual firm's profit?
 - a. \$105
 - b. \$150
 - c. \$210
 - d. \$245
 - e. \$525
23. Firms in this industry will shut down in the short run if the price is
 - a. less than \$5.
 - b. less than \$10.
 - c. less than \$15.
 - d. Firms never shut down in the short run.
24. In the long run, there will be _____ firms in this market.
 - a. 10
 - b. 15
 - c. 25
 - d. 50
 - e. 100
25. Each individual firm in this industry faces a demand curve that
 - a. is downward sloping, and flatter than the market demand curve.
 - b. is the same as the market demand curve.
 - c. is a horizontal line at the market price.
 - d. is the same as the marginal cost curve.
 - e. is the same as the average total cost curve.

26. In which of the following situations will a producer have sufficient incentive to produce one additional unit of its product?
- The consumers of the product want to buy one additional unit of the product.
 - The resources needed to produce one additional unit of the product are available.
 - The price that could be charged for one additional unit of the product is greater than the price that was charged for the last unit the firm produced.
 - The cost of producing one additional unit of the product is less than the revenue gained by selling the additional unit of the product.
 - The firm's marginal cost curve is upward sloping and the profit that the firm could earn from selling one additional unit of the product is greater than the profit the firm earned from selling the last unit of the product they produced.
27. Which of the following statements is true?
- In the long run if the price of the good in a perfectly competitive industry is above the breakeven point, new firms will enter the industry.
 - In the short run if the market price in a perfectly competitive industry is less than average variable cost the firm will not produce.
 - If one firm in a perfectly competitive industry can not earn a positive profit, the firm should shut down immediately.
 - For a perfectly competitive firm the average total cost of producing a particular level of output should always be higher than the marginal cost of producing that output.
28. All of the following are rational production decisions **EXCEPT**
- Fixed costs are irrelevant to a firm's optimal short-run production.
 - A firm will cease production in the short-run if the market price falls below its break-even price.
 - When market price exceeds a firm's minimum average variable cost, the firm produces the quantity of output at which marginal cost equals market price.
 - The short-run individual firm's supply curve corresponds to the firm's marginal cost curve where marginal cost is greater than or equal to the minimum of average variable cost.

Use the following information to answer the next two questions:

Suppose that Brock spends all of his income on flapjacks (pancakes) and new potatoes, abbreviated F and N respectively. Currently, a flapjack costs $P_F = \$2$ per stack and new potatoes cost $P_N = \$4$ per pound. Brock works for the lumber yard, and makes \$80 per day.

29. What is the equation for Brock's budget line?
- $N = 20 - \frac{1}{4} F$
 - $F = 20 - \frac{1}{2} N$
 - $40 = 2N + F$
 - $F = 80 - 2N$
30. Without knowing anything about his indifference curves, which of the following combinations of meat and potatoes could it be optimal for Brock to consume?
- 15 stacks of flapjacks; 10 pounds of new potatoes
 - 5 stacks of flapjacks; 15 pounds of new potatoes
 - 10 stacks of flapjacks; 10 pounds of new potatoes
 - 40 stacks of flapjacks; 0 pounds of new potatoes

Key:

1. B
2. B
3. C
4. B
5. B
6. B
7. C
8. C
9. C
10. D
11. A
12. C
13. B
14. D
15. C
16. C
17. A
18. C
19. C
20. A
21. D
22. A
23. A
24. A
25. C
26. D
27. B
28. B
29. C
30. D