

ECO 211
Spring 2019
Final Exam
5/7/2019

Name (Print): _____

Time Limit: 120 Minutes

This exam contains 8 short answer questions, 1 longer answer question, and 3 long answer questions. You must complete all short answer and longer answer questions; however, you only need to complete 2 of the long answer questions. Check to see if any pages are missing.

You may *not* use your books or notes on this exam. Calculators are permitted.

You are required to show your work on each problem on this exam. The following rules apply:

- **Organize your work**, in a reasonably neat and coherent way, in the space provided. Work scattered all over the page without a clear ordering will receive very little credit.
- **Show your work**. A correct answer, unsupported by calculations, explanation, or algebraic work will receive no credit; an incorrect answer supported by substantially correct calculations and explanations might still receive partial credit.
- If you need more space, use the back of the pages; clearly indicate when you have done this.

Multiple Choice: Circle the correct answer.

1. (5 points) If bundles of goods A and B lie on the same indifference curve, one can assume the individual
 - A. prefers bundle A to bundle B.
 - B. prefers neither bundle.
 - C. prefers bundle B to bundle C.
 - D. enjoys bundle A and B equally.

2. (5 points) A rise in the average productivity of labor
 - A. always reflect technical progress.
 - B. reflects technical progress if other input usage hasn't changed.
 - C. reflects technical progress if labor input hasn't changed.
 - D. reflects technical progress only if the quantity of output is increased.

3. (5 points) A firm's economic profits are given by
 - A. total revenue minus total accounting cost.
 - B. the owner's opportunity cost.
 - C. total revenue minus total economic cost.
 - D. total revenue minus the cost of capital.

4. (5 points) True or False: Solitaire is considered a game in Game Theory.
 - A. True
 - B. False

5. (5 points) Jim makes bicycles. It costs him 20 dollars in materials to create a bike. Those materials could be used to make a piece of art that could sell for \$10. Which of the following is true?
 - A. The opportunity cost of making the bike is \$30.
 - B. The economic cost is \$10.
 - C. The accounting cost is \$20.
 - D. None of the above.

6. (5 points) Technical progress will
 - A. shift a firm's production function and its related cost curves.
 - B. not affect the production function, but may shift cost curves.
 - C. shift a firm's production function and alter its marginal revenue curve.
 - D. shift a firm's production function and cause more capital (and less labor) to be hired.

7. (5 points) If a perfectly competitive firm wished to maximize profit it should produce where
 - A. $P = MC$
 - B. $MR = MC$
 - C. $MR = 0$
 - D. both a and b.

8. (5 points) Suppose a farmer is a price taker for soybean sales with cost functions given by $TC = .1q^2 + 2q + 100$. The firm's supply curve is given by
 - A. $q = .2P + 2$
 - B. $q = 5P - 10$
 - C. $q = 2P - 5$
 - D. $q = 10P - 2$

Longer Answer Question: Please answer the following. Be sure to label any graphs.

1. (20 points) Zachary has a utility function of $U(x, y) = \min[x, y]$. He has an income of \$10. Also, the price of x is \$1 and the price of y is \$2.

(a) (10 points) Draw the budget curve with x on the x-axis and y on the y-axis. Make sure to label your intercepts.

(b) (10 points) How much of x does Zachary want to consume? How much of y?

Long Answer Questions: Please answer the following. Show all work. Draw graphs where needed. Only answer 2 of the 3 questions.

1. (20 points) Jerry sells knock-knock jokes by employing writers (L) and providing them with computers (K). His production of jokes is described by the production function, $q_{jokes} = 10L^{\frac{1}{2}}K^{\frac{1}{2}}$. The market price for jokes is set at 3 dollars. Likewise, the $w = 4$ and $r = 16$.
 - (a) (10 points) What is the total cost when Jerry produces 50 jokes? How many writers does he have to employ?

- (b) (10 points) Will Jerry shut down in the short run? Why or why not?

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2. (20 points) A consumer has a preference for two goods such that she always wants to consume $y = 10 - x$. The price of x is \$1, and the price of y is \$2.
- (a) (10 points) Find the consumer demand for x in terms of prices ($P_x = \$1$ and $P_y = \$2$) and income (I).
- (b) (10 points) Is x a normal or inferior good? Why?

3. (20 points) The market for widgets is perfectly competitive. Suppose that firms invent better technology to produce the widgets. Thus, costs are lowered.
- (a) (10 points) Draw the market graph and the firm graph. Label the initial equilibrium A. Show the short run effect of the technology shift. Label the new short run equilibrium B. What happens to price, quantity, and each firm's profit?
- (b) (10 points) On the graphs from part a, show the long run effect. Assume that we have a constant cost curve. Label the new long run equilibrium C. What happens to price, quantity, and each firm's profit?

Extra Credit: Doodle.