Test 3
Economics 321
Chappell
October, 2007

Name _____

Last 4 digits SSN _____

Answer multiple choice questions on the form provided. Be sure to write your name and last 4 digits of your social security number on that form, and fill in the grid for the last 4 digits.

Answer the analytical questions in the space provided on this test sheet.

Multiple Choice: 12 questions @ 2 points each; 24 points total
Analytical Question 1: 20 points
Analytical Question 2: 30 points
Analytical Question 3: 24 points

Properly entering name and 4 digits on the appropriate forms: 2 points.

100 total points

Multiple Choice (3 points each).

1) Which of the following statements about economic profit and accounting profit is correct?
   a) Economic profit is normally a larger number than accounting profit.
   b) Economic profit and accounting profit are both defined as a difference between total revenue and total cost, but economists define total cost to include both implicit and explicit costs.
   c) Economic profit and accounting profit are both defined as a difference between total revenue and total cost, but accountants define total cost to include both implicit and explicit costs.
   d) If firms earn zero economic profits, they will eventually exit (go out of business).

2) In order to maximize profit in the short run a competitive firm:
   a) will produce a quantity such that average revenue is equal to average cost.
   b) will produce a quantity such that marginal revenue is equal to average cost.
   c) will produce a quantity such that average revenue is equal to marginal cost.
   d) None of the above.

3) A competitive firm will shut down in the short run if:
   a) It is unable to earn enough revenue to cover its non-sunk costs of production.
   b) It is unable to earn enough revenue to cover its total costs of production.
   c) $P > AVC$
   d) $P > ANSC$

4) In a competitive market, the market supply curve is:
   a) The portion of the average cost curve that lies above marginal cost.
   b) The horizontal summation of all firms' supply curves
   c) The vertical summation of all firms' supply curves.
   d) None of the above.

5) In short-run equilibrium in a competitive market:
   a) The quantity demanded will be equal to the quantity supplied.
   b) Each firm is choosing a quantity that maximizes its profit.
   c) No firm can control the market price.
   d) All of the above.

6) Which of the following conditions must be true of long-run equilibrium in a competitive market, but need not be true in a short-run equilibrium?
   a) Firms are price takers.
   b) Firms earn zero economic profit.
   c) Firms each choose an output such that price is equal to marginal cost.
   d) Average revenue must exceed the market price.

7) If a market is perfectly competitive, then in the long run:
   a) Price is equal to marginal revenue.
   b) Economic profit is equal to zero.
   c) Marginal cost is equal to average cost.
   d) All of the above.

8) In the short-run in a competitive market, producer surplus for a firm is:
   a) The same thing as economic profit.
   b) Measured by the area below the market demand curve and above the market price, out to the quantity produced.
   c) Measured by the area above the firm's supply curve and below the market price out to the quantity produced.
   d) The difference between total revenue and average cost.

9) Suppose that the climate is better for growing sweet potatoes in South Carolina than it is in North Carolina. If the market for sweet potatoes is perfectly competitive, then:
   a) In the long run, some owners of farmland in South Carolina will earn economic rent.
   b) A new entrant to the sweet potato market would prefer to locate in South Carolina.
   c) Firm profits are positive in South Carolina, but negative in North Carolina.
   d) In the long run, no one will grow sweet potatoes in North Carolina.

10) Again consider the market for sweet potatoes, which is assumed to be perfectly competitive. Which statement is true about welfare in this market?
   a) Consumer surplus is at its maximum possible level in this market.
   b) Producer surplus is at its maximum possible level in this market.
   c) Total surplus (the sum of producer surplus and consumer surplus) is at its maximum possible level in this market.
   d) All of the above.

11) Suppose that the world market for potato chips is perfectly competitive and in a short-run equilibrium. In the absence of trade, the price of potato chips in the U.S. would be $4 per 1-pound bag. However, the world price of potato chips is $3 per bag. When the U.S. is open to trade, U.S. consumers can buy and sell as many bags as they wish on the world market without affecting the world price. Which statement is correct?
   a) When the U.S. moves from a no-trade to a free-trade equilibrium, potato chip producers in the U.S. get more producer surplus.
   b) When the U.S. moves from a no-trade to a free-trade equilibrium, potato chip consumers in the U.S. get less consumer surplus.
   c) The sum of producer and consumer surplus rises when the U.S. moves from no trade to free trade.
   d) Both consumers and producers of potato chips are made worse off when the U.S. moves from no trade to free trade.

12) Again consider the potato chip market, as described in the previous question. Suppose that the U.S. adopts a tariff on imported potato chips. This will cause:
   a) A increase in government revenue.
   b) An increase in producer surplus.
   c) An decrease in consumer surplus.
   d) All of the above.

Analytical Question 1 (20 points)

The diagram below shows short-run cost curves for an individual firm in a perfectly competitive market.

Locate the short-run shut down price (i.e., the lowest price at which the firm would be willing to stay open and produce a positive quantity in the short-run).

Carefully illustrate this firm's short-run supply curve in the diagram, and explain why the supply curve is located in this position.

Question 2. (30 points)

The diagram on the next page illustrates a position of long-run equilibrium in a perfectly competitive market. The panel on the left shows demand and supply in the market as a whole, and the determination of the equilibrium price and quantity. The diagram on the right shows (short-run) cost curves for a typical individual firm.

1. Label the firm's marginal cost curve.

2. Label the firm's average cost curve.

3. Label the firm's profit-maximizing output.

Now suppose that there is a permanent **decrease** in demand.

4. Show the shift of the demand curve in the left panel of the diagram.

5. Indicate the new equilibrium level of price and the new equilibrium level of output in the market in the short-run.

6. For the firm, show the new short-run equilibrium output chosen by the firm.

7. For this new short-run equilibrium, indicate an area in the diagram that measures the profit or loss earned by the firm.

Now consider changes that take place as the market moves to a new **long-run** equilibrium. You may assume that the industry is a constant-cost industry.

8. As the market moves toward the long-run equilibrium, does entry or exit occur? Show the effect of entry or exit in the left panel.

9. Show the price level in the new long-run equilibrium.

10. In the right hand panel, show the output produced by a representative firm in the new long-run equilibrium.

Analytical Question 3 (24 points)

The diagram on the next page illustrates equilibrium in the market for gasoline, which is assumed to be a perfectly competitive industry. The equilibrium price is $3.00 per gallon.

Now suppose that the government imposes price controls on gasoline. It is illegal to sell gasoline at a price above $2.00 per gallon.

In the diagram, show:

1) Quantities demanded and supplied *before* the price control was imposed.

2) Quantities demanded and supplied *after* the price control was imposed.

Label areas in the diagram to illustrate the following items 3-7 (you may initially assume that any rationing is "efficient," meaning that there is no cost of waiting in line to buy gasoline and that those who value the gasoline most are those who end up obtaining it):

3) Consumer surplus before price controls

4) Producer surplus before price controls

5) Consumer surplus under the price controls

6) Producer surplus after the price controls

7) The deadweight welfare loss resulting from the price controls

8) Briefly explain how the measures of consumer surplus and the deadweight loss could change if rationing is not efficient (in the sense indicated above).