ECB 201: Principles of Microeconomics, Midterm Exam 2

November 16, 2023

Name and section: ______________________________

Instructions: There are three sections to this exam worth 70 points in total:

- 10 multiple choice questions, (20 points)
- 10 True/false questions, (20 points)
- 5 short answer questions, (30 points)

Clearly mark your answers in the exam book. For True/False questions, if the answer if false, briefly explain why. You may use a calculator but no other resources are permitted.

Help Received:

"A Cadet will not lie, cheat, steal, nor tolerate those who do."

Multiple choice section: Clearly circle the most correct answer for each question.

1. A firm is earning positive economic profits in a monopolistically competitive market. In the long run:
   A. Other firms will sell substitutes, decreasing demand
   B. Other firms sell identical products, increasing supply
   C. They will continue to earn positive economic profits
   D. Their market power will decrease, causing them to make negative economic profits
   E. Their marginal revenue will be equal to price

2. In the long run, firms operating under monopolistic competition:
   A. Are subject to barriers to exit
   B. Are allocatively efficient but not productively efficient
   C. Are both allocatively and productively efficient
   D. Are productively efficient but not allocatively efficient
   E. Are neither allocatively nor productively efficient

3. A firm will produce in the short run but exit the market in the long run if:
   A. $ATC < P < AVC$
   B. $AVC < P < ATC$
   C. $AVC < ATC < P$
   D. $P < AVC < ATC$
   E. $ATC < P < AVC$

4. If a market is allocatively efficient:
   A. Producers earn positive economic profits
   B. Firms earn only normal profits
   C. All surplus goes to consumers
   D. The quantity supplied equals the quantity demanded
   E. The marginal benefit of the last unit consumed is equal to the marginal cost to produce it

5. The restaurant industry is characterized by many small firms which sell differentiated products with free entry and exit of firms. In the long run, firms in the restaurant industry will:
   A. Earn zero economic profit
   B. Earn positive economic profits
   C. leave the industry
   D. Produce output at the minimum average cost
   E. Diversify their output

6. Which of the following industries is most likely to support a natural monopoly
   A. Smartphone apps
   B. Coffee beans
   C. Electricity transmission
   D. Hotels
   E. Clothing

7. Relative to an otherwise identical firm operating in a perfectly competitive market, a firm with market power...
    A. Produces a lower quantity and charges a lower price
    B. Produces a lower quantity and charges a higher price
    C. Producer a higher quantity and charges a lower price
    D. Produces a higher quantity and charges a higher price
    E. There is no consistent pattern.

8. If a firm has market power:
    A. Demand is perfectly elastic
    B. They can force other firms to leave the market
    C. They can increase their customers' demand
    D. Their marginal revenue is less than the price
    E. They will always earn a positive profit

9. Under which market structures do firms earn zero economic profit in the long run?
    A. Perfect Competition
    B. Monopolistic Competition
    C. Monopoly
    D. Both Perfect Competition and Monopolistic Competition
    E. All market structures

10. The market for banjos in initially in equilibrium. After this, two things change.
    - Several manufacturers of banjos exit the market.
    - The price of large copper kettles, (a complement to the consumption of banjos,) falls.

    Relative to the initial equilibrium, the new equilibrium in the banjo market will have:
    A. Higher prices but we cannot predict the quantity
    B. Lower prices but we cannot predict the quantity
    C. Higher quantity but we cannot predict the price
    D. Lower quantity but we cannot predict the price
    E. We cannot predict the change in either price or quantity

True or False section. For each question, indicate whether the statement is true or false; if false, briefly explain why.

1. A monopolist's market power guarantees that they earn a positive economic profit.

2. If a firm in a perfectly competitive market is producing a quantity where their marginal costs exceed their marginal revenue, they should increase their production to increase their profit.

3. A monopolist will never choose a price and quantity on the inelastic portion of the demand curve for their product.

4. A store announces that they will have a 50% off sale in December. This will cause demand for their product in November to increase.

5. A perfectly inelastic demand curve is vertical.

6. Monopolists' market power allows them to charge whatever price they please for their output.

7. Economic costs are always higher than accounting costs.

8. Monopolies are illegal under federal law in the United States.

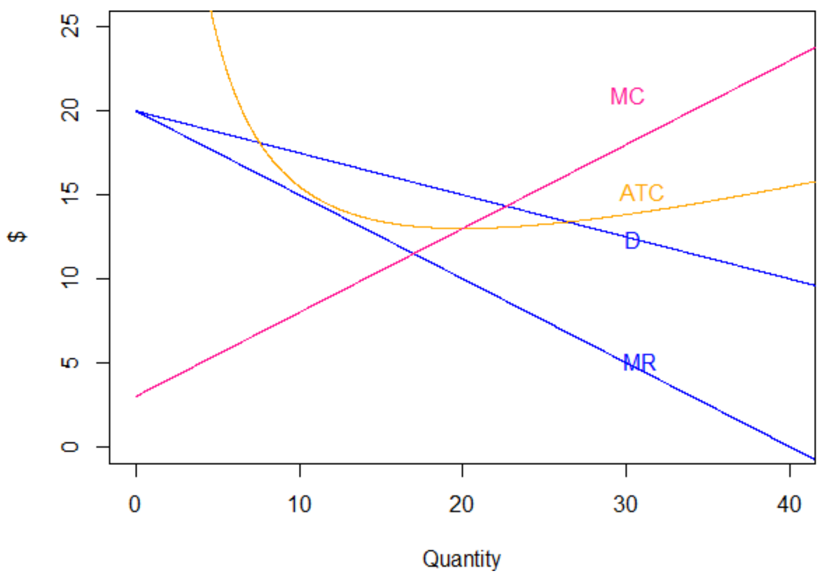
9. The Long Run is defined by time and is several years in the future for most industries.

10. Firms do not want to continue operating in a market if they are earning zero economic profits.

Short answer section. Briefly address each question; a sentence or two is sufficient

1. *Perfect Competition:* Briefly explain why $P = MR$ causes efficient outcomes under perfect competition

2. *Monopoly* A monopolist holds a patent for a new prescription drug and faces the cost and demand curves depicted below:



Shade in the areas representing **A) the firm's profit or loss** and **B) dead-weight loss** in this market relative to a firm with the same cost structure operating under perfect competition.

3. *Welfare Analysis:* Suppose that, to maintain their monopoly, the firm in the previous question engages in lobbying to extend the length of their patent protection. This costs the firm a great deal of money and results in no utility gains to consumers. What does this mean for our welfare analysis in this market; is the area of dead-weight loss you indicated overestimating, underestimating, or accurately estimating the true social cost of the barrier to entry? Why?

4. *Perfect competition and price taking:* Assume that a firm is operating in a perfectly competitive industry with an equilibrium price $p^{\star}$.
   - A) What would happen if a firm set their price above the market price $p^{\star}$; would this maximize their profits?
   - B) What would happen if a firm set their price below the market price $p^{\star}$; would this maximize their profits?

5. (10 pts.) *Characteristics of Perfect Competition:* List three of the five conditions of perfect competition. For each one, explain briefly why it matters for firms' or consumers' behavior.