Microeconomics Final Exam Answer Guide

Note: This exam was created by Professor Ron Kessler for use with Miller/Abbot/Fefferman/Kessler/Sulyma, *Economics Today: The Micro View*, Second Edition.

Section I. Multiple Choice. (2 points each). Choose the best answer. Choose only one answer per question.

1. The statement that "Unemployment is the most important problem that should be solved" is a
   a. statement lacking in logic.
   b. positive statement.
   c. non-testable statement.
   d. normative statement.

2. A straight line production possibilities curve is inconsistent with
   a. an unchanged opportunity cost.
   b. highly specialized resources.
   c. a technologically inefficient society.
   d. the underutilization of productive resources.

3. Which of the following is NOT a determinant of supply?
   a. cost of input used in production
   b. price of substitutes
   c. technology
   d. number of suppliers

4. Which of the following is NOT a determinant of demand?
   a. taste and preference.
   b. income.
   c. changes in expectations of future relative prices.
   d. a government subsidy for producers.

Price per Widget-	Quantity of X Demanded per Time Period	Quantity of X Supplied per Time Period
100	0	1500
80	200	1200
60	400	900
40	600	600
20	800	300
0	1000	0

5. Given the market data for widgets in the table above, an equilibrium quantity is established at
   a. 900 units.
   b. 1200 units.
   c. 300 units.
   d. 600 units.

6. If a firm raises the price of its product and as a result total revenue rises, we can conclude that

a. demand is elastic in this price range.
b. the product's price is below the midpoint of its demand curve.
c. demand is inelastic in this price range.
d. other things constant, the firm's profits will increase.

7. The more substitutes available for a good, the more likely it is that the demand will be relatively

a. elastic.
b. inelastic.
c. steep.
d. flat.

8. Price ceilings set below a market equilibrium price cause

a. producers to receive higher prices.
b. consumers to pay higher prices.
c. surpluses.
d. shortages.

9. Economists generally define the long run as being

a. that period of time in which at least one of the firm's inputs, usually plant size, is fixed.
b. that period of time in which all inputs are variable.
c. any period of time less than one year.
d. any period of time less than six months.

10. All of the following are characteristics of a competitive market, EXCEPT

a. Economic profits must be positive in the short run.
b. The industry demand curve is downward sloping.
c. The demand curve for the individual firm is perfectly elastic.
d. There is free entry and exit in the long run.

11. Firms are assumed to be motivated to maximize

a. total revenue.
b. total profits.
c. total sales.
d. average profit.

12 If a monopoly is to continue to earn profits in the long run, there must be

a. mutual interdependence among firms.
b. homogeneous products.
c. barriers to market entry.
d. free entry and exit to the market.

13. If a firm sells 11 units of output at $100 per unit and 12 units of output when price is reduced to $99, its marginal revenue for the last unit sold is

a. $11.
b. $99.
c. $109.
d. $88.

14. In the long run, monopolistic competitive firms are not productively efficient because

a. profits are positive.
b. average total costs are not at a minimum.
c. of zero profits
d. marginal costs are rising.

15. Which of the following industrial organization structures has "Kinked" demand curves?

a. perfectly competitive.
b. monopolistically competitive.
c. oligopolistic.
d. monopolistic.

Section II. (4 points each) Definitions. Define 5 of the following 6 terms in the space provided. Use diagrams and examples in your answers wherever possible. Give at least three points of interest about each definition.

Note, each answer must include a definition, and at least two other important points, such as a diagram, example, formula or explanation of how the term and underlying concept is used. The answers given are examples of what could be done.

Price Discrimination

Price discrimination is defined as selling a given product at more than one price, usually because of a difference in willingness to pay, and not related to differences in costs or product features. Thus, selling tickets at a movie theatre at different prices is an example of price discrimination because there is no difference in cost in providing a seat to a child versus an adult, and the product is the same. Selling products at a discount to high volume customers is price differentiation because there is a difference in cost to servicing these customers (there may be an element of discrimination as well). The four conditions necessary for price discrimination to work are: The firm must have a downward sloping demand curve, the firm must be able to separate the markets, the buyers in different markets must have different price elasticities of demand, and the firm must be able to prevent resale of the product. Diagram: Shows the monoplist capturing consumer surplus.

Pure Monopoly

A monopoly firm is the sole seller of product, which has no close substitutes. The monopolist is a price searcher, as the firm's demand and the industry demand curves are the same. Thus, the monopolist faces a downward sloping demand curve and marginal revenue curve. The barriers to entry in monopoly keep other firms out of the industry. Barriers to entry include: exclusive ownership of resources, economies of scale, legal or government restrictions, and predatory practices of the monopolist. Diagram: shows the intersection of MC=MR, with AR>AVC. In this case, the demand curve should be clearly shown above the MR curve.

Short Run

The short run is a period of time when at least one input (typically capital) cannot be changed.

The factor(s) that cannot be changed in the production process are called fixed, and the ones that can be changed (for example labour) are called variable. Production in the short run is subject to the law of diminishing returns, which is the observation that after some point, as a variable factor of production is added to the fixed factors of production, there will eventually result in a smaller marginal product.

As well, firms cannot enter or exit from an industry in the short run, but they can in the long run. This is particularly important in determining the short run versus long run outcomes in pure competition and monopolistically competitive markets.

Opportunity cost

Opportunity cost is defined as "the highest-valued, next-best alternative that must be sacrificed to attain something or to satisfy a want." Opportunity cost is used in many different situations in economics, and it is a fundamental principle that decisions should be measured using opportunity cost. For example, when deciding whether or not to be in a business, economists use opportunity cost to define the term economic profits, which includes the opportunity cost of being in a particular business. As well, it is used in international trade, and underpins the concept of comparative advantage. The slope of the production possibilities curve reflects the opportunity cost of producing goods in a country, which determines their comparative advantage.

Marginal Revenue

Marginal Revenue is the additional revenue received when selling one more unit of a good. The idea of marginal revenue is used particularly in determining the profit maximizing output for a firm, because the rule for profit maximization is that marginal revenue must equal marginal cost. For firms that face downward sloping demand curves (for example in monopoly and monopolistic competition), marginal revenue is less than the price they sell a product for, because they must lower the price on all units in order to sell one more unit. Diagram: Shows how MR is related to Demand.

Complementary goods

Two goods are considered complements if both are used together for consumption. For example, bread and butter. The more you buy of one, the more you will likely buy of the other. When the price of a good rises, then the demand for the complements to that good will be reduced (ie. Shift to the left) and vice versa. The price of complements is one of the non-price determinants of demand. Diagram: Shows a demand curve shifting to the left.

Section III. True or False. (8 points each) Given a written answer explaining whether each statement is true or false. Use diagrams in your answers. No credit is given for unexplained answers.

a. Total profit = (average profit) x (number of units sold). Therefore, a firm that is interested in maximizing total profit only needs to find where average profit is greatest to find maximum total profit.

False. Firms find maximum profits when they set MC=MR, assuming that AR>AVC. As a counter example, a firm would prefer to earn an average profit of $0.1 on 1 million units rather than $10 on a 100 units. Diagram: shows the intersection of MC=MR, with AR > AVC.

b. Crop failure will cause the supply of wheat to fall, and the price of wheat to rise. The rise in price will cause demand to fall, and hence the price to fall. Thus, crop failure leads to a fall in the market price of wheat.

False. Crop failure leads to a rise in the market price of wheat, not a decline. The flaw in the analysis above is that it is Not the case that "rise in price will cause demand to fall." Rather, a rise in price will cause a movement **along the demand curve**, not a shift in the demand curve. Diagram: A supply and demand curve showing supply shifting left, with a stationary demand curve.

c. The monopolistically competitive producer maximizes profit by equating price and marginal cost.

False. Only in a purely competitive market do producers maximize profit by equating price and marginal cost. Our general rule is that profits are maximized by equating MR and MC, and only in pure competition does MR=P. Diagram: shows the intersection of MC=MR, with AR>AVC. In this case, the demand curve should be clearly shown above the MR curve.

d. In the short run, the monopolist will charge the highest price the market will bear for its product.

False. The monopolist does not charge the highest possible price, as this will substantially reduce sales and profit from what is possible. The monopolist picks the price and quantity combination by equating MR=MC, (with demand > AVC). The price picked by the monopolist will be higher than would be charged in a competitive market. Diagram: Typical monopoly diagram showing the optimum choice is where MR = MC, and not where the demand curve hits the vertical axis.

Section IV. (20 points) Answer **one** of the following questions in the space provided. Use diagrams in your answers.

A. Explain carefully the purely competitive model of industry structure. Explain the assumptions of the model. Outline the differences in outcomes between the short run and the long run. Define and describe how industry achieves allocative and productive efficiency.

This question asks the student to reiterate the material from the chapter on perfection competition. These are the main points that need to be covered:

- The characteristics (assumptions) of perfect competition are: large number of buyers and sellers of a homogeneous product, each supplier is small relative to the market, there is free entry and exit, and buyers and sellers possess good information. Thus the demand curve for the individual firm is perfectly elastic, and the firm is a price taker, with the market forces determining the price of the product. Agriculture is an example of an industry close to this model.
- The perfect competitor will maximize production by setting MR=MC, subject to the rule that AR (demand) > AVC. Diagram: Should show the diagram with ATC, AVC, MR and MC
- The PC firm's supply curve is the marginal cost curve above the minimum average variable cost (the shut down point).
- In the short run, the PC firm can earn economic profit. In the long run, it cannot because of entry of new firms, which alters prices to ensure zero economic profit is earned by these firms. Diagram: Should show the adjustment of the industry and the individual firm to zero profits.
- The long-run supply curve of the PC industry may be upward or downward sloping because of diseconomies or economies of scale.
- The PC market structure achieves productive efficiency because price equals minimum average total cost in the long run, and allocative efficiency because the right amount of good is being produced (price equals MC). Diagram: Shows the points on the ATC where MC=Minimum ATC=Price.

B. Explain with the help of diagrams, the theory of monopolistic competition. How is this model like the model of pure monopoly/pure competition? Be sure to outline the assumptions you use in your explanation. Give examples of industries where this model would be applicable.

This question asks the student to reiterate the material from the chapter on monopolistic competition. These are the main points that need to be covered:

- The monopolistically competitive market structure lies between the extremes of pure competition and pure monopoly.
- The characteristics of monopolistic competition include: large number of sellers, each with a small market share, producing a differentiated but closely substitutable product. There are no barriers to entry. Because of the product differentiation, a key characteristic of this market structure, the firms have some control over price and face a downward sloping demand curve and marginal revenue curve, like a monopolist.

- The MC firm will profit maximize where the MR and MC curve intersect, assuming that demand (AR) exceeds AVC. Diagram: Should show the diagram with ATC, AVC, MR and MC.
- In the short run, the MC firm can earn economic profit (demand is above ATC). In the long run, it cannot because of entry of new firms, which bring new substitutes for the firms product. This will result in zero economic profit being earned by these firms. Diagram: Should show the adjustment of the individual firm's demand curve to zero profits.
- This long run equilibrium is above the lowest cost (productively efficient) point, and so each firm operates with some excess capacity. Consumers pay a higher price, which reflects the higher cost of providing some product choice.

Bonus Question (3 marks) Who is the minister of finance for Canada? In 2002 the Finance Minister was Paul Martin.