

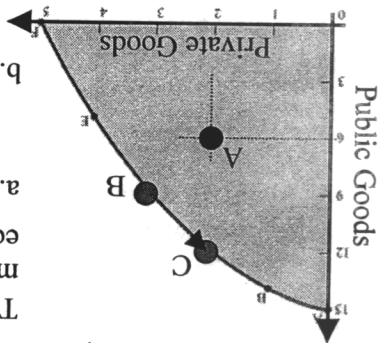
**Principles of Economics I**

Winter Semester 2005 / 2006

Dr. John E. Brennan

You are allowed to use a non-programmable calculator (in accordance with the instructions given by the examination office) and a translating dictionary from your native language to English (without any notes written into it). All of the ten (10) exam questions must be answered (the estimated time to spend on each question is provided). This examination consists of three (3) pages and must be completed within 120 minutes.

**Question 1 (10 Minutes)**



- The Production Possibilities Frontier (PPF) shows the maximum amount of output that can be obtained in an economy with a given amount of inputs.
- Describe the situation of the economy depicted by point A where 6 units of Public Goods and 2 units of Private Goods are being produced.
  - If the decision-makers in this economy make the choice to move from point B to point C, describe the opportunity cost involved in this decision.

**Question 2 (20 Minutes)**

The great economist Alfred Marshall (1842–1924) postulated the Law of Demand. Utilizing the example below:

$$Q^d_x = f(p_x) = 100 - 25 p_x^{0.6}$$

- State the Law of Demand.
- Explain the difference between the Demand Function and the Demand Curve.
- What is the *ceteris paribus* assumption and why is it so essential to demand analysis?
- Explain what is meant by the terminology - "Demand Shift."

**Question 3 (10 Minutes)**

Market equilibrium occurs at the equilibrium price where the quantity demanded equals the quantity supplied,  $Q^d_x = Q^s_x$ .

- Describe the situation that would prevail in a market if the price were to be fixed by the government below the free market equilibrium price. Show your analysis on a graph.
- When there is an increase in demand in a market, what happens to the equilibrium price and quantity?

(c) What do we mean by the term: The "Comparative Statics Analysis" of markets?

**Question 4 (10 Minutes)**

In determining factor incomes, it is important to understand the demand for the various factors of production. Assume that the producer is in a perfectly competitive market and the product sells for 100 € per unit.

Labor	$Q^x$	$MP_L$	$MRP_L$
0	0	~	~
1	12		
2	19		
3	24		
4	28		
5	30		

- (a) What do we mean by the statement: "Factor demands are derived demands?"
- (b) How much Labor would be employed if the wage rate were 400 € per week?
- (c) If the selling price of the product increased to 200 €, Labor would now equal?

**Question 5 (10 Minutes)**

In a perfectly competitive market in the short run, if the price of a firm's product is less than:

- (a) The minimum average total cost, the firm will consider its options and will consider?
- (b) The minimum average variable cost, the firm will consider doing?

**Question 6 (5 Minutes)**

"Indifference curves cannot intersect." Explain this statement in detail.

**Question 7 (15 Minutes)**

- "An increase in the price of beef caused an increase in the sales of chicken."
  - (a) Explain this statement in terms of the elasticity concept.
  - "By lowering the selling price, the firm increased its total revenue."
    - (b) Explain this statement in terms of the elasticity concept.
    - "A consumer's income increases, and his/her demand for a certain product decreases."
      - (c) Explain this statement in terms of the elasticity concept.

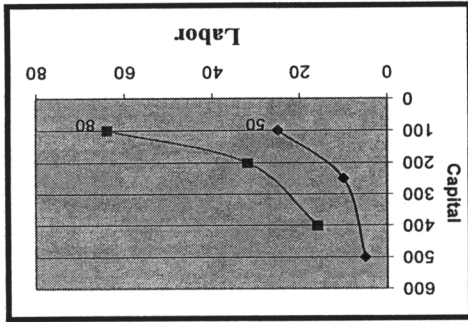
**Question 8 (10 Minutes)**

Consider all the following cost curves: ATC, AFC, AVC, and MC.

- (a) Explain why these cost curves are all U-shaped except one?
- (b) Explain the relationship between the ATC and AVC curves and MC.
- (c) Why is it sometimes said that the AFC curve is not very interesting?

**GOOD LUCK !!**  
This is the end of the examination.

- (a) What is the MRTS for  $Q = 50$  between  $L = 10$  and  $25$ ?  
 (b) Does this production function have increasing, decreasing, or constant returns to scale?  
 (c) Does this production function have diminishing returns to labor? Demonstrate.

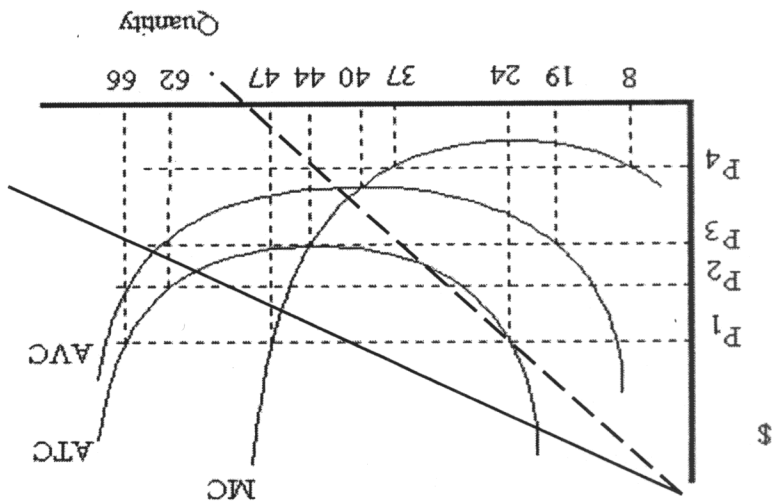


Labor (L)	Capital (K)	Output (Q)
5	500	50
10	250	50
25	100	50
40	50	50
500	5	50
16	80	80
32	40	80
64	20	80

**Question 10 (15 Minutes)**  
 To determine the output levels just substitute the values for labor ( $L$ ) and capital ( $K$ ) into the production function formula. For example, when  $L = 5$  and  $K = 500$  we get:  

$$\bar{Q} = \sqrt{LK} = \sqrt{(5)(500)} = \sqrt{2500} = 50$$

- (a) What price would this profit maximizing monopolist charge for its product?  
 (b) Explain the concept of Marginal Revenue as it relates to the monopolist.  
 (c) Explain the concept of Marginal Revenue as it relates to a firm in perfect competition.



Consider the monopolist depicted below:

**Question 9 (15 Minutes)**