

OLLSCOIL NA hÉIREANN, GAILLIMH
NATIONAL UNIVERSITY OF IRELAND, GALWAY

Semester 1 Examinations 2001/2002

Microeconomics (EC 215)

2nd B.A. (Economic and Social Studies) – St. Angela's College, Sligo

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Time Allowed: THREE HOURS

Marks: 300

Instructions: This exam consists of two sections worth 150 marks each.

- **Section A:** Answer 15 out of 20 short questions. Each question is worth 10 marks.
- **Section B:** Answer 3 Questions (worth 50 marks each).

Section A

1. For each of the following situations, what happens to the fish market? Indicate whether the demand or supply curve shifts, and if so, in what direction (Illustrate your answer). Indicate what happens to equilibrium price and quantity.
 - a. the price of fish decreases
 - b. a report is published stating that fish consumption reduces the risk of heart disease
 - c. the number of fishing boats and fishermen increases
2. Which two assumptions on consumer preferences imply that indifference curves do not intersect? Explain.
3. If an indifference map is composed of a set of vertical lines, what would this tell us about consumer preferences?
4. What does a utility maximizing consumer do when $MRS > P_x/P_y$?
5. Give an example of any cost of living index. Are there any limitations associated with using this index as a measure of inflation?
6. Define cross price elasticity of demand. State when it is positive and when it is negative.

7. True or False: The total effect of a price increase is always negative. (Explain your answer).
8. The government decides to subsidize the household purchase of books by allowing each household a discount on the first 20 books purchased in a given year. Show the effect this has on the household budget constraint. What kind of people benefit most from this policy initiative?
9. Can you think of instances where the utility maximizing consumption bundle is not where the marginal rate of substitution (MRS) is equal to the absolute slope of the budget constraint (P_x/P_y)?
10. Draw engel curves for both a normal good and an inferior good.
11. What assumptions about perfectly competitive markets ensure that the long run profits are zero for all firms? Explain.
12. What is the firm's supply curve under perfect competition and why?
13. What is the relationship between returns to scale and a firm's average and marginal cost curves?
14. If a firm enjoys increasing returns to scale, what would its map of isoquants look like and why?
15. If isoquants are L shaped what is the relationship between the two inputs?
16. True or False: A firm can produce below the Average Variable Cost in the short run. Explain.
17. True or False: A monopolist will not sell at a price where demand is inelastic. Explain your answer.
18. Suppose production processes A and B give rise to the following marginal and average total cost curves:

$$\begin{array}{ll} MC_A = 12 Q_A, & ATC_A = 16/Q_A + 6Q_A \\ MC_B = 4Q_B, & ATC_B = 240/Q_B + 2Q_B \end{array}$$

where the subscripts denote processes A and B respectively. If the firm wants to produce 12 units of output, how much should it produce with each process?

19. A firm purchases capital and labour in competitive markets at prices of $r = 8$ and $w = 10$, respectively. With the firm's current input mix, the marginal product of capital is 24 and the marginal product of labour is 20. Is this firm minimizing its costs? If so, explain how you know. If not, explain what the firm ought to do.

20. If the wage rate and rental rate of capital both fall but the wage rate falls by more than the rental rate, what happens to (a) the production technique and (b) level of output produced?

Section B

1. The monthly demand curve for dissection kits among science students is given by $P = 50 - 0.5q$, where P is the price per kit and Q is the number of kits purchased per month.
 - a. Draw the demand curve.
 - b. If the price of dissection kits is £20 how much revenue will producers of dissection kits get each month?
 - c. Calculate the PED for kits when the price of dissection kits is £20.
 - d. What should the makers of dissection kits do to increase total revenue?
 - e. Calculate consumer surplus when the price of dissection kits is £20.
2.
 - a. Define an indifference curve.
 - b. Indifference curves generally slope downwards and are convex to the origin. Explain why.
 - c. Illustrate and explain why (in consumer theory) the optimal consumption bundle occurs at the point of tangency between the budget constraint and the highest attainable indifference curve.
 - d. Analyze fully and illustrate the income and substitution effects of an increase in the price of a normal good.
3.
 - a. Define an isoquant and an isocost line.
 - b. What determines the slope of an isoquant and an isocost line?
 - c. A firm uses two inputs K and L to produce its output. What condition must be satisfied if the firm is minimizing its costs?
 - d. Write a short note on each of the following types of market structures
 - (i) Perfect Competition
 - (ii) Monopoly
 - (iii) Duopoly
 - (iv) 1st Degree Price Discriminating Monopolist
4.
 - a. A monopolist has a demand curve given by $P = 100 - Q$ and a total cost curve given by $TC = Q^2 + 16$. The associated marginal cost curve is $MC = 2Q$. Find the monopolist's profit maximizing quantity and price. How much economic profit will the monopolist earn?
 - b. A firm in a competitive industry has a short-run marginal cost curve $SMC = 5 + 2Q$ and a short-run average variable cost curve $AVC = 5 + Q$. If the firm faces a price of 25 what quantity should it sell? At what level of fixed cost will this firm earn zero economic profit (i.e. normal profit)?
 - c. Define producer surplus.