

注意：考試開始鈴響前，不得翻閱試題，
並不得書寫、畫記、作答。


國立清華大學 110 學年度碩士班考試入學試題

系所班組別：經濟學系

科目代碼：4501

考試科目：個體經濟學

—作答注意事項—

1. 請核對答案卷（卡）上之准考證號、科目名稱是否正確。
2. 考試開始後，請於作答前先翻閱整份試題，是否有污損或試題印刷不清，得舉手請監試人員處理，但不得要求解釋題意。
3. 考生限在答案卷上標記「由此開始作答」區內作答，且不可書寫姓名、准考證號或與作答無關之其他文字或符號。
4. 答案卷用盡不得要求加頁。
5. 答案卷可用任何書寫工具作答，惟為方便閱卷辨識，請儘量使用藍色或黑色書寫；答案卡限用 2B 鉛筆畫記；如畫記不清（含未依範例畫記）致光學閱讀機無法辨識答案者，其後果一律由考生自行負責。
6. 其他應考規則、違規處理及扣分方式，請自行詳閱准考證明上「國立清華大學試場規則及違規處理辦法」，無法因本試題封面作答注意事項中未列明而稱未知悉。

國立清華大學 110 學年度碩士班考試入學試題

系所班組別： 經濟學系碩士班 (0545)

考試科目 (代碼)： 個體經濟學 (4501)

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*請在【答案卷】作答

1. (24 points) Respond to each statement *True*, *False* or *Uncertain* and then *justify* your response. The justification of your response is the most important part of your answer.
 - (1) (6 points) Mr. Wang consumes only coffee and coffee cake and consumes them only together (they are perfect complements). If we calculate a CPI using only these two goods, the CPI will differ from the true cost-of-living index.
 - (2) (6 points) Network externalities may result in consumers buying products that contain inferior technology.
 - (3) (6 points) When Mary raised the price of her home-made cookies, her total revenue increased. This suggests that the demand for Mary's cookies is elastic.
 - (4) (6 points) If marginal product is equal to average product, then total product is at a maximum.
2. (14 points) Miss Lee likes steaks, S , and fried chicken, C . Her utility function is

$$U = 10S^2C$$

Her weekly income is NT\$9,000, which she spends on only steaks and chicken.

- (1) (8 points) If she pays NT\$1,000 for a steak and NT\$500 for a chicken, what is her optimal consumption bundle? Show her budget line, indifference curve, and optimal bundle, e_1 , in a diagram.
 - (2) (6 points) Suppose the price of chicken doubles to NT\$1,000. How does her optimal consumption of chicken and steaks change? Show her new budget line and optimal bundle, e_2 , in your diagram.
3. (12 points) Each competitive firm in an industry has the short-run cost function $C = 50 + 5q + q^2$, and the market price is \$35.
 - (1) (6 points) What is the profit-maximizing output level for each firm? What is the total revenue? What are the profits?
 - (2) (6 points) If the fixed costs were \$250 instead of \$50, how does this change affect the firm's output decision and profits? Should the firm continue to operate?

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共 2 頁，第 2 頁 *請在【答案卷】作答

4. (25 points) Consider a weapons producer that is selling guns to two countries that are at war with one another. Guns can be produced at a constant marginal cost of \$10 per unit. The demand for guns in each of the two countries is given by:
- $$P = 50 - 0.5Q \text{ (Country A)}$$
- $$P = 20 - 0.25Q \text{ (Country B)}$$
- (1) If the weapons producer can charge different prices to each country, what price and quantity will it sell to each country?
 - (2) If the weapons producer cannot price discriminate, what price and quantity of guns will it sell to each country?
 - (3) Will the weapons manufacture make more profit from price discrimination? Briefly explain. Why is that the manufacturer will likely be able to practice price discrimination?
 - (4) Which country will benefit from price discrimination? Which country will be worse off from price discrimination? Explain briefly.
 - (5) Is the deadweight loss higher under price discrimination or a single-price? Show mathematically.
5. (10 points) Explain why it is unwise to bid more than your valuation of the good in a sealed bid second-price auction.
6. (15 points) Suppose the market demand is $p = 10 - Q$, and firms incur a fixed cost of \$5 and no marginal cost. Assume that Firm A is the incumbent firm in this market, and there is a potential entrant Firm B, in which, their quantities are denoted as q_A and q_B , respectively.
- (1) What are the corresponding Stackelberg leader-follower equilibrium output level and profits for two firms?
 - (2) Can Firm A deter the entry of its rival, Firm B? If yes, how?