

國立臺灣科技大學  
九十三學年度碩士班考試試題

系所組別：企業管理系甲組、企業管理系乙組  
科 目：經濟學

總分 100 分

1. Compare the industry output and price in a Cournot versus a competitive equilibrium. Do firms earn economic profits in the Cournot model? Does economic theory predict that firms always earn economic profits in oligopolistic industries? What does the empirical evidence indicate? In addition, How can you tell the difference between Cournot and Nash

Equilibrium? Please explain. (35 分)

2. Consider a personal computer market with two firms, X and Y. Suppose that Firm X and Y have the following total cost function:

$$TC_x = 10Q_x$$

$$TC_y = 10Q_y$$

The market demand function is given by

$$P = 100 - Q_x - Q_y \quad (35 \text{ 分})$$

- Calculate the Cournot equilibrium outputs of firm X and Y in this market. (10 分)
- Calculate their market price in the Cournot equilibrium. (5 分)
- Calculate their profits in the Cournot equilibrium. (10 分)
- Suppose that firm X is considering implementing a proprietary technology they have developed. The onetime sunk cost of implementing this process is \$ 300. Once the investment is made, marginal cost will be reduced to \$4. Firm Y has no access to this, or any other cost-saving technology, and its marginal cost will remain at \$10. Is it worthwhile for firm X to implement this technology or not? Prove your answer. (10 分)

3. 請回答下列問題： (30 分)

(1) A risk-averse individual is offered a choice between a gamble that pays \$1000 with a probability of 25% and \$100 with a probability of 75%, or a payment of \$325. Which would he choose?(10 分)

(2) Suppose there just two goods, X and Y. If X accounts for 75% of the budget and has income elasticity  $\eta_x = 0.8$ , then what can be said about the income elasticity  $\eta_y$  for Y? (10 分)

(3) If an organization such as the Mafia effectively monopolized illegal activity, would you expect to observe less crime than under competitive free entry into the "industry"? (10 分)

