

國立中央大學98學年度碩士班考試入學試題卷

所別：產業經濟研究所碩士班 產業經濟組 科目：個體經濟學 共 2 頁 第 1 頁  
\*請在試卷答案卷(卡)內作答

注意：請依照題目順序作答，無法作答者請寫題號後空白，違者扣 10 分。

1. (10%) Suppose the demand for rice is given by  $q_D = 3 - p$ , and the supply of rice is given by  $q_S = 2p$ , where  $p$  is the price.
  - (a) (5%) Calculate the consumer surplus?
  - (b) (5%) What are the producer profits?
  
2. (15%) An electronic manufacturing company employs 100 workers and has two factories, one that produces computer (CO) and one that makes television (TV). With  $m$  workers, the computer factory can make  $m^2$  COs per day. With  $n$  workers, the television factory can make  $5n^2$  TVs per day.
  - (a) (5%) Show the form of production possibilities frontier.
  - (b) (10%) Assume computers sell for \$20,000 and TVs sell for \$25,000. What assignment of workers maximizes revenue?
  
3. (25%) A TV factory costs \$2 million to construct and the marginal cost of the  $q^{\text{th}}$  TV is  $\text{Max}[10, q^2/1,000]$ .
  - (a) (10%) What are average total costs?
  - (b) (5%) What is short run supply?
  - (c) (10%) What is the long run competitive supply of TVs?
  
4. (15%) Parking meter system is called "an honor system": instead of paying someone when you park your car, you are "on your honor" to put money in the meter. Of course, it isn't just a matter of honor: there are also enforcement officers ("meter maids") who show up from time to time and penalize rule-breakers. So:
  - (a) (5%) If you "risk it" by putting nothing in the meter, there's an 80% chance that you'll get away with it (so your cost will be \$0) and a 20% chance that you'll get a \$20 ticket. What is the expected cost of taking this risky option?
  - (b) (5%) Imagine that the city managers want to reduce the number of people who park illegally. If you are the manager to decide the option, a 10% rise in the ticket or a 10% increase in the probability of getting ticket, which option is better?

參考用

注意：背面有試題

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- (c) (5%) Imagine that the city managers want to save money by cutting in half the number of enforcement officers (so that the chance of getting a ticket is only 10%). If you are the manager to do this without drastically increasing the attractiveness of cheating, what are the ticket prices you should set?
5. (35%) Consider two firms, each with costs  $C(q) = 3q^2$ . They produce identical products, and the market demand curve is given by  $q_1 + q_2 = 10 - p$ .
- (a) (10%) Find each firm's output and the market price under collusion.
- (b) (5%) Find total industry profits under collusion.
- (c) (10%) Find each firm's output and the market price under Cournot competition.
- (d) (10%) Find each firm's output and the market price under Stackleberg leader-follower competition.

參考用

注意：背面有試題