

系所組別： 電信管理研究所甲組

考試科目： 經濟學

考試日期：0224，節次：2

※ 考生請注意：本試題不可使用計算機

請勿在本試題紙上作答，否則不予計分

Entrance Examination for Institute of Telecommunications Management in 2013

The exam has 20 questions in blank and each question is 5 points. There are 100 points in total.

Question 1. Consider a perfect competitive market of telephone voice resale market. There are 10,000 identical firms in this market and each firm has a cost

$$TC(q) = \frac{1}{4}q^2 - \frac{3}{2}q + 150.$$

There are also 10,000 identical consumers in the market. Each consumer has a utility function

$$u(q, r) = \sqrt{(q - 50) \cdot r}$$

where q is the minutes of resale voice consumed and r is the unit of other products and services. The utility form implies that every consumer must consume at least 50 minutes of voice service. Every consumer has an income of \$350, the price of voice service is p per minute, and the price of other products and services is 1. Answer the following questions.

- (a) Derive the supply function of a firm _____ and the demand function of a consumer _____.
- (b) Derive market supply function _____ and market demand function _____.
- (c) What are the equilibrium market price $p =$ _____ and quantity $Q =$ _____?

Question 2. Consider a dominant firm and fringe firm model of fixed-lined telephone service. In the market, there are a dominant firm D and three fringe firms f that have little market share. The firm D is the price setter of the market and the three firms f are the price-accepters. Market demand is $Q(P) = 10,000 - P$ and the supply of three fringe firms f is $Q_f(P) = P - 6,000$. The marginal cost of the dominant firm is $MC_d = 5,000$.

- (a) Derive dominant firm D 's demand function _____.
- (b) Calculate the market price $P =$ _____, the quantity of dominant firm $Q_d =$ _____ and the quantity of three fringe firms $Q_f =$ _____.
- (c) Is this market efficient? Explain it. _____.

Question 3. Suppose firms Apple and Banana operate under conditions of

(背面仍有題目,請繼續作答)

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constant average and marginal cost, but that $MC_A = 10$, $MC_B = 8$. The demand for the firms' output is given by $Q_D = 500 - 20P$. If the firms practice Bertrand price competition, what will be the market price $P =$ _____ and the profit of firm Banana $\pi_B =$ _____ under a Nash equilibrium?

Question 4. Suppose that $C = 60 + 0.8Y_D$, $I = 150 - 10r$, $G = 250$, $T = 200$, $M^s = 100$, and $M^d = 40 + 0.1Y - 10r$.

- (a) Write the equations for the IS and LM schedules _____, _____.
 (b) Find the equilibrium values for income $Y_0 =$ _____ and the interest rate $r_0 =$ _____.

Question 5. What is the maximum amount of the increase in checkable deposits that can result from a \$1,000 increase in legal reserves if the required reserve ratio for checkable deposit is 10 percent? _____.
 Give two reasons why the actual increase may fall short of the theoretical maximum _____, _____.