

國立中央大學九十學年度碩士班研究生入學試題卷

所別: 財務金融學系甲、乙兩組 科目: 經濟分析 共2頁 第1頁

1. A consumer has the utility function $u = y_1^{1/2} y_2^{2/3}$, where y_1 and y_2 are the amount of money spent on consumption in year 1 and year 2 respectively. The consumer is sure to receive incomes of \bar{y}_1 and \bar{y}_2 in year 1 and year 2. Suppose that the consumer can borrow or lend at a given market interest rate, r . Let b denote the amount borrowed ($b > 0$) or lent ($b < 0$).
 - a. Write down the consumer's optimization problem. (5%)
 - b. Show that the consumer borrows or lends up to the point at which his time preference rate is just equal to the market interest rate. (5%)
 - c. Derive the consumer's consumption demand function and demand for borrowing/lending function. (5%)

2. Suppose the cost function is $c(y) = 6y^2 + 24$, for $y > 0$ and $c(0) = 0$. The inverse demand function is $p = 48 - 18y$.
 - a. Does there exist a competitive equilibrium in this industry? (5%)Now suppose there is only one firm, and this firm is a monopolist.
 - b. What is the price in equilibrium? What is the profit of the monopolist? (5%)
 - c. What is consumers' surplus in this equilibrium? Is this society better-off having this commodity provided by a monopolist or would it be better to shutdown this industry? (5%)

3. Suppose all firms in an industry have the following long-run total cost curve:
 $c(y) = 0.5y^2 + 20y$.
 - a. Suppose the number of (identical) firms is n . Let Y denote the aggregate industry supply. Derive an expression for the aggregate supply as a function of the market price P and n ; i.e., Y as a function of P and n . (5%)
 - b. Suppose the market demand curve has the equation $Y = 30 - P$. Use your answer above to compute the equilibrium price in the industry when the number of firms is n , i.e., write an expression for the equilibrium price as a function of n . (5%)
 - c. Does each firm make a positive profit regardless of the value of n ? Will there always be a reason for new firms to enter this industry? (5%)
 - d. Does the aggregate output converge to some level as n tends to infinity? If so what is this? What is the corresponding equilibrium price and profit of each firm (as n tends to infinity)? (5%)

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4. 本題與菲利普曲線 (Phillips Curve) 有關。

- (a) 傳統的非利浦曲線顯示通貨膨脹率與失業率之間存在著如何的關係？以數學表達式分別顯示短期非利浦曲線與長期非利浦曲線。(6%)
- (b) 非利浦曲線最初是由經濟學家非利浦所觀察發現的實証現象。倘若後來的數據不支持此一現象，則你的解釋為何？(4%)
- (c) 試述總合供給曲線與非利浦曲線的關係。(6%)
- (d) 美國從一九九三年底起持續歷經了一百一十多個月的景氣擴張，低通膨率與低失業率同時伴隨著共存。你認為美國所歷經的這個「低通膨率、低失業率」現象是否推翻了非利浦曲線所顯示的關係？理由何在？(4%)

5. 本題與總合供給曲線 (aggregate supply curve) 有關。

- (a) 我們需要一個整體經濟的生產函數來導出總合供給曲線。試寫出任一生產函數的數學表達式，並解釋造成生產力提升的原因為何？生產函數與總合供給曲線的關係為何？(10%)
- (b) 影響總合供給曲線的斜率與位置的因素分別為何？(10%)
- (c) 利用總合供給曲線與總合需求曲線來分析貨幣政策的功效與貨幣的中立性問題。(10%)