

國立臺灣科技大學103學年度碩士班招生試題

系所組別：企業管理系碩士班甲組、乙組

科目：經濟學

(總分為100分)

1. Please answer the following questions:

- (1) Harry claims that the two equations $x_1 + (x_2)^{1/2} = 10$ and $x_1^2 + 2x_1(x_2)^{1/2} + x_2 = 100$ are both valid indifference curves for him, can this be correct? (5 points)
- (2) John's Marginal Rate of Substitution in Consumption is $MRS_c = y/x$. The market prices are $p_x = 5$ and $p_y = 1$. What is the equation of his Income Expansion Path? (5 points)
- (3) Mary always spends exactly half his income in foods. What can you say about his income elasticity and price elasticity for food? (5 points)

2. In a perfectly competitive market, industry demand is given by $Q = 1000 - 20P$. The typical firm's average cost is $AC = 300/Q + Q/3$.

- (1) Find the minimal efficient scale (MES) for the typical firm. (5 points)
- (2) Suppose ten firms serve the market. Find both the individual firm's supply curve and the market supply curve. (5 points)
- (3) Find the market equilibrium price and equilibrium quantity. (5 points)
- (4) What is the typical firm's profit? (5 points)
- (5) Determine the long-run, zero-profit equilibrium. How many firms serve the market? (5 points)

3. Two firms produce differentiated products. Firm 1 faces the demand curve: $Q_1 = 75 - P_1 + 0.5P_2$. Firm 2 faces the analogous demand curve: $Q_2 = 75 - P_2 + 0.5P_1$. For each firm $AC = MC = 30$. Suppose firm 1 and firm 2 are in a Bertrand duopoly world.

- (1) Find the optimal price reaction function for both firm 1 and firm 2. (5 points)
- (2) In equilibrium, the firms set identical prices: $P_1 = P_2$. Find the firms' equilibrium prices, quantities, and profits. (5 points)



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4. 從一個國家各部門支出面來看，國內生產額 (GDP) 是由消費支出 (C)、投資 (I)、政府消費支出 (G) 及淨出口 (出口 (X) - 進口 (M)) 所組成。即 $GDP = C + I + G + (X - M)$ 。請以此公式，IS-LM 模型與總和需求曲線 (AD) 和總和供給曲線 (AS)，利用文字敘述或圖形解釋下列問題：

(一)

1. 我國已採用低利率政策多年，雖物價仍屬平穩，但經濟表現仍不佳 (像 2013 年 GDP 成長率確定低於 3%)，內需市場動力不足且出口甚至衰退。可是國內房地產價格仍持續上漲，造成國民財富分配不均情況日益嚴重，請說明。(15%)
2. 若你(妳)是國家經濟政策掌舵者，你(妳)應如何做，才可能解決此問題?(10%)

(二)

1. 中國大陸近年 GDP 年成長率已從快速成長階段 (成長率超過 10%) 轉成中度成長 (成長率約 7~8%)，但整個國家仍存在高借貸利率、房地產價格飆漲，以及錢荒等現象，請說明。(15%)
2. 若你(妳)是中國國家經濟政策掌舵者，你(妳)應如何做，才可能解決此問題?(10%)

