

世新大學九十七學年度碩士班招生考試試題卷

第 1 頁共計 4 頁

系所組別	考 試 科 目
經濟學系	個體經濟學

※本考題 ☐ 可使用 ☒ 禁止使用 簡易型電子計算機

※考生請於答案卷內作答

一、選擇題，單選，每題 3 分，共 30 分

- Sometimes coffee growers in Brazil have destroyed some or all of their coffee crops in order to keep it from going to market. The best explanation for this type of action on the part of the growers is that they believed that:
 - coffee was an inferior good.
 - there was an international shortage of coffee.
 - they faced an inelastic supply of coffee.
 - the demand for coffee had an elasticity coefficient greater than zero but less than one.
- The demand function for apples is $Q_A = 200 - 4p_A + 2p_B$ and the demand function for bananas is $Q_B = 200 - 3p_B + p_A$, where p_A and p_B are respectively the price of apples and bananas. If the fixed supply of apples is 130 and the fixed supply of bananas is 120, then the equilibrium price of apples is
 - \$32.
 - \$37.
 - \$41.
 - \$49.
- A firm faces a demand function $D(P)$, for which the revenue-maximizing price is \$20. The demand function is altered to $2D(P)$. What is the new revenue-maximizing price?
 - \$10.
 - \$20.
 - \$40.
 - There is insufficient information to determine this.
- Suppose that you used regression analysis to statistically estimate the demand function for widgets. Your estimated function is $Q = P_w^{-2.1} P_a^{2.8} P_b^{-1.2} I$, where P_w is the price of widgets; P_a is the price of good a ; P_b is the price of good b ; I is the consumer's money income. Form this information, it would be correct in concluding that:
 - the demand curve for widgets is upward sloping.
 - the price elasticity of demand for widgets is -2.1.
 - widgets and good b are substitutes.
 - widgets can be considered an inferior good.

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第 2 頁共計 4 頁

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5. If a consumer purchases good A rather than good B, then
 - a) when A is not cheaper than B, we can infer that the consumer prefers A to B.
 - b) when A is not cheaper than B, we can infer that the consumer prefers B to A.
 - c) when B is not cheaper than A, we can infer that the consumer prefers A to B.
 - d) when B is not cheaper than A, we can infer that the consumer prefers B to A.

6. Harmon's utility function is $U(x, y) = xy$. His income is \$100. The price of good y is $P_y = 4$. Good x is priced as follows. The first 15 units cost \$4 per unit and any additional units cost \$2 per unit. What consumption bundle does Harmon choose?
 - a) $(x^*, y^*) = (12.5, 12.5)$
 - b) $(x^*, y^*) = (25, 12.5)$
 - c) $(x^*, y^*) = (12.5, 25)$
 - d) $(x^*, y^*) = (15, 10)$

7. Which of the following utility functions represent preferences of a consumer who does not have homothetic preferences?
 - a) $U(x, y) = xy$.
 - b) $U(x, y) = 3x + y$.
 - c) $U(x, y) = x + y^2$.
 - d) $U(x, y) = \min\{x, y\}$.

8. Diana consumes commodities x and y and her utility function is $U(x, y) = xy^2$. Good x costs \$2 per unit and good y costs \$1 per unit. If she is endowed with 3 units of x and 6 units of y, how many units of good y will she consume?
 - a) 4.
 - b) 8.
 - c) 10.
 - d) 12

9. If a consumer views a unit of consumption in period 1 as a perfect substitute (one for one) for a unit of consumption in period 2, and if the real interest rate is 0.1, the consumer will
 - a) consume only in period 1.
 - b) consume only in period 2.
 - c) consume equal amounts in each period.
 - d) consume more in period 1 than in period 2 if income elasticity exceeds 1, otherwise consume more in period 2 than in period 1.

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10. Emily's expected utility function is $p\sqrt{x_1} + (1-p)\sqrt{x_2}$, where p is the probability that she has money x_1 and $(1-p)$ is the probability that she has money x_2 . Emily is offered a choice between getting a sure payment of \$1,600 or a lottery in which she receives \$400 with probability p or \$2,500 with probability $(1-p)$. Emily will choose the lottery if

- a) $p < 0.33$.
- b) $p < 0.13$.
- c) $p > 0.5$.
- d) $p > 0.67$.

二、(12 分) 假設市場上只有四個人對於 x 商品有需求，分別是 A、B、C 和 D。

四個人個別對 x 商品的需求完全相同，都是： $x = \sqrt{I \times p_y} / 2p_x$ ，其中 p_x 是 x

商品價格， p_y 是相關產品 y 的價格， I 是個人所得。

(Q1) 求出市場總需求函數。若已知 $p_x = p_y = 1$ ，且四個人的所得分別為：

$I_A = I_B = 25$ ， $I_C = 64$ ， $I_D = 100$ ，求出此時的市場總需求量。(4 分)

(Q2) 承(Q1)，若 x 商品價格上漲成為 $p_x = 2$ ，新的市場需求量為多少？據此計算 x 商品的需求彈性。(2 分)

(Q3) 承(Q1)，若政府對 y 商品課以 300% 的從價稅，新的 x 商品市場需求量為多少？計算 y 商品價格變動影響 x 商品需求的交叉彈性，並說明 x 商品與 y 商品互為替代品或互補品。(3 分)

(Q4) 承(Q1)，若四人當中，C 因離職所得減少 15，A 則因工作表現佳所得增加 11，新的 x 商品市場需求量為多少？說明消費者所得分配對於 x 商品需求的影響。(3 分)

註：(Q2)、(Q3)、(Q4)彼此獨立。

三、(8 分) 假設小明對於漢堡與果汁的效用可以函數表示： $U(x, y) = x^{0.5}y^{0.5}$ ，其中 x 為果汁數量， y 為漢堡數量。目前果汁價格 $p_x = 25$ ，漢堡價格 $p_y = 100$ ，小明每週預算 200 元。

(Q1) 求出可使小明達到效用極大的漢堡與果汁的最適消費數量。(4 分)

(Q2) 假若果汁漲價 5 元成為 30 元，漢堡減價 20 元成為 80 元，請問小明消費果汁與漢堡的總效用會提高或降低？說明之。(4 分)

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四、(10 分) 某一完全競爭市場有一萬個需求函數完全一樣的消費者與 1,000 家成本函數完全一樣的廠商。每一個消費者的需求函數是： $Q(P) = 1 - 0.01P$ 。

(1) 考慮廠商短期如下：

- 每一家廠商的短期成本是 $F + 100 + Q^2$ ，其中 F 是固定成本， $100 + Q^2$ 是變動成本

(Q1) 短期均衡價格為何？在短期每一家廠商該生產多少？(5 分)

(2) 考慮廠商長期如下：

- 假設每一家廠商的長期成本是 $100 + Q^2$

(Q2) 完全競爭市場長期均衡價格為何？(5 分)

五、(10 分) A monopolist faces a demand curve given by $Q(P) = 10P^{-3}$. Its cost function is $c(Q) = 2Q$.

(Q1) What is its optimal level of output and price? (5 分)

(Q2) The government is considering subsidizing the marginal costs of the monopolist. What level of subsidy should the government choose if it wants the monopolist to produce the socially optimal amount of output? (5 分)

六、(30 分) 考慮一同質產品雙占市場(DUOPOLY)。

- 市場需求是 $Q(P) = 100 - P$

- 廠商 1 的成本函數是 $TC_1(Q) = 10Q$ ，廠商 2 的成本函數是 $TC_2(Q) = \frac{Q^2}{2}$

(Q1) 若兩家廠商進行“數量競爭”，Cournot 均衡產量為何？(5 分)

(Q2) 若兩家廠商進行“價格競爭”(若兩家價格一樣則平分市場)，此兩家廠商 Bertrand 均衡價格為何？(15 分)

(Q3) 若廠商 1 是價格領導性廠商(即廠商 1 先宣告價格，廠商 2 再根據廠商 1 所宣告的價格，決定其產量，廠商 1 的銷售量 = 市場需求量減去廠商 2 的產量)，請問廠商 1 的最適宣告價格為何？(10 分)