國立成功大學

112學年度碩士班招生考試試題

編　號：331

系　所：經濟學系

科　目：個體經濟學

日　期：0206

節　次：第 2 節

備　註：不可使用計算機

※考生請注意：本試題不可使用計算機。請於答案卷(卡)作答，於本試題紙上作答者，不予計分。

1. John's utility function is $u(q_1, q_2) = \sqrt{q_1} + \sqrt{q_2}$. Find his compensated demand function for good 1. (10%)

2. A firm uses labor (L) and capital (K) to produce. It has production function $f(L, K) = LK$. Find the elasticity of substitution of the isoquant $q = f(L, K)$. (10%)

3. Sofia's utility function is $u(q_1, q_2) = \min(q_1, q_2)$. Her income is 40 and the price is $(p_1, p_2) = (1,1)$. Now p_1 rises to 2. Find the equivalent variation. (10%)

4. A firm has production function $f(L, K) = \sqrt{LK} + L + K$. In the long run, we assume that the wage rate is \$1 per hour and the rental rate of a unit of capital is \$1 per hour. Find the firm's total cost function $C(q)$. (10%)

5. John's utility function is $u(q_1, q_2) = q_1 q_2$. His income is 40 and the price is $(p_1, p_2) = (1,1)$. Now p_1 rises to 2. Find the change of his consumer surplus. (10%)

6. In a Stackelberg model, we assume that firm 1 is the leader and firm 2 is the follower. Both firms have the same cost function $C(q) = 2q$. The demand function is $Q = 100 - p$, where Q is the quantity of apple and p is the price of apple. Find the subgame perfect equilibrium. (10%)

7. In a pure exchange economy there are two consumers. Consumer 1 has endowment (1,2) and consumer 2 has endowment (2,3). Both consumers have the same utility function $u(q_1, q_2) = q_1 q_2$. Find the Walrasian equilibria. (10%)

8. Does a monopolist choose its optimal output level in the elastic range of market demand? Explain your answer. (10%)

9. A consumer has preference relation $\succsim$ which is represented by a utility function. Is $\succsim$ complete and transitive? Explain your answer. (10%)

10. A firm has a production function exhibiting increasing returns to scale. Does the firm's cost function exhibit economies of scale? Explain your answer. (10%)