國立成功大學 104 學年度碩士班招生考試試題

系所組別：電信管理研究所甲組

考試科目：經濟學

考試日期：0212，節次：2

※ 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。

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

Question 1.

(a) A young connoisseur has \$300 to spend to build a small wine cellar. She enjoys two vintages in particular: a 1997 French Bordeaux (w_f) at \$20 per bottle and a less expensive 2002 California varietal wine (w_c) priced at \$4. How much of each wine $f =$ _____ and $c =$ _____ should she purchase if her utility is

$$U(w_f, w_c) = w_f^{2/3} w_c^{1/3}.$$

(b) When she arrived at wine store, our young oenologist discovered that the price of the French Bordeaux has fallen to \$10 a bottle because of a decline in the value of the franc. If the price of the California wine remains stable at \$4 per bottle, how much of each wine $f =$ _____ and $c =$ _____ should our friend purchase to maximize utility under these altered conditions?

(c) Explain why this wine-fancier is better off in part (b) than in part (a). _____

Question 2. Suppose that an individual's utility for X and Y is represented by the CES function (for $\delta = -1$):

$$\text{Utility} = U(X, Y) = -1/X - 1/Y.$$

(a) Use the Lagrangian multiplier method to calculate the uncompensated demand function for X for this function. $X =$ _____

(b) Show that the demand function for X is homogeneous of degree zero in P_X, P_Y, and I.

_____

(c) How do changes in P_Y shift the demand function for X? _____

Question 3. Players A and B are engaged in a coin-matching game. Each shows a coin as either heads or tails. If the coins match, B pays A \$1. If they differ, A pays B \$1.

(a) Describe the payoff matrix for this game _____.

(b) How might the players choose their strategies in this case? _____

Question 4. A monopolist can produce at constant average and marginal costs of $AC = MC = 5$. The firm faces a market demand curve given by $Q = 53 - P$.

(a) Calculate the profit-maximizing price-quantity combination for the monopolist. $P_M =$ _____, $Q_M =$ _____.

(b) What output level would be produced by this industry under perfect competition? $Q_C =$ _____ Calculate the consumer surplus obtained by the consumers. $CS_C =$ _____

(c) What is the value of the deadweight loss from monopolization? $DWL_M =$ _____

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Question 5. An economy has full-employment output of 1,000. Desired consumption and desired investment are

$$C_d=200+0.8(Y-T)-500r;$$

$$I_d=200-500r.$$

Government purchases are 196, and taxes are

$$T=20+0.25Y.$$

Money demand is

$$M^d/P=0.5Y-250(r+\pi^e),$$

where the expected rate of inflation, π^e, is 0.10. The nominal supply of money M =9,890.

(a) What are the general equilibrium values of the real interest rate ***r*=**_____, price level ***P*=**_____, and consumption ***C*=**_____?

(b) Suppose that government purchases are increased to G=216. What are the new general equilibrium values of the real interest rate ***r*=**_____, and price level ***P*=**_____?