淡江大學 99 學年度碩士班招生考試試題

系別：財金系、保險系、國企系　　科目：經　濟　學

准帶項目請打「V」	
V	計 算 機

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PART 1: Multiple Choice Questions

1. (5%) Carol consumes X_1 and X_2 together in fixed proportions. She always consumes 2 units of X_1 for every unit of X_2. One utility function that describes her preferences is
(A) $U(X_1, X_2) = X_1 + 2X_2$
(B) $U(X_1, X_2) = 2X_1 + X_2$
(C) $U(X_1, X_2) = \min \{X_1, 2X_2\}$
(D) $U(X_1, X_2) = \min \{2X_1, X_2\}$

2. (5%) The production function is given by $Y = 4X^{0.5}$. If the price of the commodity produced is $60 per unit and the cost of the input is $10 per unit, what is the maximum amount of profit the firm will make?
(A) $1,440
(B) $1,880
(C) $2,880
(D) $1,425

3. (5%) The demand function for orange juice is $Q = 247 - 8P$ and the supply function is $Q = 19 + 4P$. The government decides to support the price of orange juice at a price floor of $27 per unit by buying orange juice and destroying all that it has purchased. How many units must the government destroy?
(A) 105
(B) 10
(C) 40
(D) 96

4. (5%) Some statistics for an economy are given as follows: Population = 300, Labor Force = 200, and Employment = 150. If the natural rate of unemployment is 10 %, what would the output gap be in this economy according to Okun's Law?
(A) -15%
(B) -30%
(C) 15%
(D) 30%

5. (5%) Assume that an economy has a short-run expectations-augmented Phillips curve $\pi = \pi^e - 0.5(u - 0.06)$. Then the natural rate of unemployment is:
(A) 0.12
(B) 0.06
(C) 0.03
(D) 0.5

6. (5%) Suppose that your company is in equilibrium with its capital stock at its desired level. A permanent increase in the depreciation rate now has what effect on your desired capital stock?
(A) Raises it because the future marginal productivity of capital is higher.
(B) Lowers it because the future marginal productivity of capital is lower.
(C) Raises it because the user cost of capital is now lower.
(D) Lowers it because the user cost of capital is now higher.

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PART 2: Numerical Problems

7. (15%) A person's utility function is of the form $U(X, Y) = 5XY$. The prices of good X and Y are $P_X = 4$ and $P_Y = 2$, respectively. The person's income, M is = 1200.
(a) What quantities of X and Y should the consumer purchase to maximize his utility?
(b) Determine the person's income offer curve (IOC).
(c) Derive the Engel curve for X and Y, respectively.

8. (20%) A monopolist firm faces the following cost curve $C = Q^2 + 12$, where Q is the output produced. The demand for its product is given by $P = 24 - Q$.
(a) Find the equilibrium price and quantity.
(b) Find the profit level.
(c) Calculate the Consumer Surplus, the Producer Surplus and the Deadweight Loss associated to the monopoly.

9. (15%) Assume the production function for real GDP is $Y = 2K^{0.5}L^{0.5}$. The marginal product of labor (i.e., the demand curve for labor) is $W/P = K^{0.5}/L^{0.5}$. Assume K and L are fixed at $K = 100$ and $L = 100$.
(a) What are the long-run values for real GDP and real wage?
(b) If the minimum real wage is set at $W/P = 2$, what is the unemployment rate?
(c) What minimum real wage would achieve an unemployment rate equal to 36%?

10. (20%) Consider the following static classical economy: The representative household has preferences over consumption goods, Y^D, and labor, L^S, given by the utility function $U(Y^D, L^S) = \ln(Y^D) + \ln(1 - L^S)$. The representative firm owns a technology represented by the production function $Y^S = 2KL^D$. The level of capital, K, is fixed at $K = 2$, i.e., the firm only chooses how much labor, L^D, it will employ. Calculate the equilibrium values of W (nominal wage), L, and Y. (Normalize the equilibrium price level such that $P = 1$.)