

考 試 科 目	個體經濟學	系 所 別	經濟學系	考 試 時 間	2 月 5 日(星期四)第二節
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1. (25 分) $U(X_1, X_2, X_3, X_4) = [10 + \min(X_1^{-\alpha}, X_2^{-\alpha})(1 + X_3)^{1-\alpha}]^{-\beta}$ 為某一消費者的效用函數，其中 $1 > \alpha > \beta > 0$ 。
 - (A) (10 分) 此效用函數所代表的偏好是否滿足完整性、遞移性、越多越好以及連續性。
 - (B) (15 分) 請推導此消費者的需求函數。

2. (25 分) $Q = f(x) = x^2$ ，為某一廠商的生產函數，其中 Q 為產出， x 為要素投入， $f(\cdot)$ 為生產函數。同時，要素的市場價格為 W ，產出的市場價格則為 P 。
 - (A) (5 分) 何謂生產函數？請寫下生產函數的定義。
 - (B) (5 分) 請推導此廠商的邊際成本函數。
 - (C) (15 分) 在完全競爭市場之下，請推導此廠商利潤極大化的最適產量。

3. (20 分，每小題 10 分) True/False/Uncertain
 - (A) The slope of a labor demand curve is always negative.
 - (B) $\frac{\partial PS}{\partial P}$ is always equal to $\frac{\partial \pi}{\partial P}$ for an individual firm in a perfect competitive market. But it is not true for monopoly. PS is producer surplus, π is profit and P is output price.

4. (10 分) What are homogeneous and homothetic functions? What properties do they have in common? How do they differ? When would an economist prefer one over the other when building an economic model?

5. (10 分) A consumer has initial wealth \$90,000 and faces the risk to lose \$30,000 with probability 0.1. An insurance company offers the following insurance contract: The consumer gets a payment $P > 0$, if she suffers a loss, and zero otherwise. The premium for this contract is $0.1P$. Assume that the consumer has an expected utility function and is strictly risk averse. Will the consumer buy the insurance? How much premium will the consumer pay in order to maximize his/her expected utility?

6. (10 分，每小題 5 分) 解釋下列名詞，並說明其在經濟學上的重要性。
 - (A) strictly dominated strategy
 - (B) conditional factor demand function

備

註

一、作答於試題上者，不予計分。
 二、試題請隨卷繳交。