

國立清華大學 103 學年度碩士班考試入學試題

系所班組別：經濟學系碩士班

考試科目（代碼）：個體經濟學(4101)

共 2 頁，第 1 頁 *請在【答案卷、卡】作答

1. 某生產半導體廠商生產過程所排放的廢水會造成河流的汙染。假設該廠商所生產的商品需求函數 (the inverse demand function) 為 $p = 500 - 2Q$ ，廠商在沒有管制下的私有邊際成本為 $MC^p = 80 + 2Q$ 。假設汙水排放的邊際損害為 $MC^g = Q$ 。請將以下各小題的答案畫圖表示
 - a. 請問在沒有管制下的競爭均衡產量與價格為何？(5%)
 - b. 請問社會的最適均衡為何？政府該如何課稅可使競爭下的均衡達到社會的最適均衡？(10%)
 - c. 若該廠商為獨占性廠商，請問在沒有管制下廠商的均衡為何？(5%)
 - d. 以此例比較在沒有政府管制的情況下，若存在外部性的競爭均衡與獨佔均衡的福利 (5%)

2. 風險與不確定性
 - a. 威力彩的中獎率極低，為何還是有許多人願意排隊購買？(7%)
 - b. 假設某項投資若投資\$1000，有一半的機會可以獲得\$1400，但有一半機會只剩下\$700。A君和B君各擁有1000元；假設A君僅投資\$1000，而B君除了投資自己的\$1000亦向朋友借了\$1000(免利息)去投資。請比較A君與B君投資的預期報酬(Expected value of net of repayment)與標準差。並討論融資對於預期報酬與風險的影響。(10%)
 - c. 假設你只考慮投資相同期望值與標準差的投資案。若這些投資案的收益 (payoffs)是互相獨立的，請問將相同的金額投資於一種投資案或將此金額分成10等分後再投資於10項不同的投資案，其預期報酬與風險是否相同？並說明。(8%)

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3. There are three ways to measure the change in consumer welfare when there is an increase in the price of a good: change in consumer surplus, compensating variation, and equivalent variation.
 - a. Use graphs to explain each of these three measures when there is an increase in the price. (12%)
 - b. What is the ranking of sizes of these effects if the good is normal? How does this ranking change if the good is inferior? (5%)
 - c. Use the Slutsky equation to how the differences in these three measures are determined? (8%)

4. Consider the market of rice in Taiwan which is perfectly competitive, and the equilibrium price equals \$20 per unit. Suppose that the government believes that the equilibrium price is too low and wish the rice farmers to receive \$40 instead. The government considers two projects: price support and deficiency payment. The price support program involves in setting price equal to \$40 and the government purchases the amount of excess supply then destroys the rice. The deficiency payment involves in government subsidizing the consumer enough money such that they are willing to purchase the amount producers wish to produce at price equals to \$40. Draw two graphs to show the consumer surplus, producer surplus, government expenditure, and the corresponding deadweight loss of each program. Which program is better? Explain. (25%)