

考試科目

統計學及經濟學

所別

會計所

考試時間

星期 日 上午第

壹. 50%
(25%) I.

政府鑑於財源不足，且為抑制國人對「檳榔」之消費，故採取增加「銷售稅」的方式，如果業者轉嫁給消費者，便可達到「以價制量」及「增加稅收」之雙重目的。

但有另類學者主張：檳榔業者屬於收入較低的農業者，與其課徵「銷售稅」，不如向徵「定額稅」(由全民負擔)，使得全民的所得均降低，自然也會減少對檳榔之消費，同樣也可以達到上述目的，而且比較公平。

(15%) ① 請分析以上那一種稅造成的社會淨損失較小？

(10%) ② 也有人認為只對「檳榔」課稅，會造成 (deadweight loss)

對其他「提神藥或興奮劑」之需求，所以，應該對相同功用之物品，一視同仁，一律課稅，您同意嗎？理由何在？

25% II. 試建構 - IS-LM 模型 (5%) 分析以下命題是否正確？

(10%) ① 當前利率水準極低 (假設近於流動性陷阱) 的情況下，則財富效果會使貨幣政策奏效。

(10%) ② 如果人們有理性預期 (rational expectation)，則一切經濟政策均將無效。

考試科目	統計學	所別	會計研究所	考試時間	6月24日 下午第 二 節
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1. If X , Y , and Z are positive valued and all have means of 5 and standard deviations of 3, use the Chebyshev inequality to find the probability that the average of X , Y , and Z is less than 12. (10%)
- (a) If X , Y , and Z are independent,
- (b) If X , Y , and Z all have correlation coefficients of 0.3.
2. National park officials are concerned about the number of rabbits inhabiting their parks. An initial random sample of $n_1 = 80$ rabbits was trapped, tagged, and released. As soon as the first sample was completed, the officials being working on a second random sample of $n_2 = 60$. They trap 5 rabbits that were tagged previously. Estimate the total number, N . (17%)
3. A new chocolate product is to be test marketed by giving a free sample to randomly selected customers and asking them to state whether or not they like the product. With a 95% confidence level and a target sampling error of 0.05 or less, what sample size would you recommend. (20%)
- (a) $\hat{p} = 0.35$ (b) \hat{p} is unknown.
4. Show that the least squares estimators $\hat{\beta}_0$ and $\hat{\beta}_1$ for the parameters in the simple linear model
- $$Y = \beta_0 + \beta_1 X + \epsilon \quad \epsilon \stackrel{i.i.d.}{\sim} N(0, \sigma^2)$$
- are unbiased estimators. (17%)

考試科目	統計學	所別	會計研究所	考試時間	6月24日 星期二 下午第 節
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5. Three suppliers provide the following data on defective parts :

Supplier	Part Quality		
	Good	Minor Defect	Major Defect
A	90	3	7
B	170	18	7
C	135	6	9

Use $\alpha=0.05$ and test for independence between the supplier and the part quality. What does the result of your analysis tell the purchasing department ? (6%)

6. A company attempts to evaluate the potential for a new bonus plan by selecting a random sample of 5 salespersons to use the bonus plan for a trial period. The weekly sales volumes before and after implementing the bonus plan are shown below :

Salesperson	Weekly sales (Before)	Weekly sales (After)
1	15	18
2	12	14
3	18	19
4	15	18
5	16	18

國立政治大學圖

(a) Use $\alpha=0.05$ and test to see if the bonus plan will result in an increase in the mean weekly sales.

(b) provide a 90% confidence interval estimate for the mean increase in weekly sales that can be expected if a new bonus plan is implement. (40%)

* 查表值: $\chi_{0.05}^2(3)=7.81$, $\chi_{0.05}^2(4)=9.49$, $\chi_{0.05}^2(9)=16.92$; $Z_{0.025}=1.96$, $Z_{0.05}=1.645$, $Z_{0.005}=2.58$; $Z_{0.01}=2.33$; $t_{0.05}(4)=2.132$, $t_{0.05}(5)=2.015$, $t_{0.015}(4)=2.776$, $t_{0.025}(5)=2.571$, $t_{0.01}(4)=1.533$, $t_{0.015}(5)=1.476$

考試科目	會計學	所別	會計學系	考試時間	月 日 上午第 節
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一、(20%)

道南公司鄭會計長為瞭解機器的運轉時數與每月所支付的保養費用間之關係，特蒐集該公司 86 年 1 月份至 8 月份的相關資料如下：

	機器運轉小時	保養費用
一月	40	\$ 250
二月	65	440
三月	80	480
四月	82	490
五月	105	620
六月	136	790
七月	164	840
八月	180	950

試作：

1. 以高低點法估計保養費用的成本函數。
2. 以最小平方方法估計保養費用的成本函數。
3. 若鄭會計長預測 9 月份機器將運轉 152 小時。試分別根據 1.、2. 小題的結果預測道南公司將須支付多少保養費用。
4. 根據高低點法及最小平方方法所分別預測出來的保養費用金額，何者較為可靠？試簡要說明之。

二、(15%)

從策略成本分析觀點言，作業可分為組織性作業 (Organizational activities) 及營運性作業 (Operational activities) 兩類，試說明該兩類作業之意義及其相互間之關係。

三、(15%)

顧客滿意度 (Customer satisfaction) 是屬於量性 (quantitative) 的績效指標 (measure of performance) 或質性 (qualitative) 的績效指標？試舉例說明之。

考試科目	會計學	所別	會計	考試時間	6月24日 上午第二 星期二
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四、25%

According to the Statement of Financial Accounting Concept No. 2, relevance and reliability are two primary qualities that make accounting information useful for decision making.

Required:

1. Explain what is "relevance and reliability"?
2. How to examine "an accounting method produces information that is (more) relevant and/or (more) reliable"?

五、Please briefly explain the following terms related to accounting research.(25%)

- (1) positive vs. normative accounting theory
- (2) big bath
- (3) permanent and transitory components of income
- (4) event study
- (5) proxy variable
- (6) abnormal return
- (7) earnings response coefficient
- (8) information content
- (9) agency cost
- (10) signaling theory

This test has two excerpts of articles from a recent issue of *Newsweek* and two questions for each excerpt. Please answer the questions **in your own words and in English only**. **No score will be given to answers that are not made in English.**

- A. "There is nonetheless little question that Americans, given a moment to reflect, are deeply ambivalent about the morality of taking a life. According to the latest Newsweek Poll, there is overwhelming support for the death penalty when it is considered in the abstract; only 16 percent oppose it. But no criminal defendant - not even Tim McVeigh - is an abstraction to the jurors who must decide his fate. Experts say two questions weigh heavily when jurors must make a death-penalty decision. The first is simple pragmatism: will the defendant eventually be released - and possibly kill again - if his life is spared? The second is emotional; did the defendant show any remorse, and was the crime particularly barbarous? Newsweek's Polling shows many of the same attitudes prevail in the public mind. Like jurors, most Americans make sharp distinctions based on the motive for the crime - though McVeigh's defense team can hardly be encouraged by the fact that 56 percent say convicted terrorists deserve to die. Like jurors, 74 percent say they support the death penalty because it eliminates the chance that a defendant will kill again. But 73 percent worry that a wrongful conviction can lead to the execution of an innocent person, and 67 percent agree that poorer people are more likely to be executed than the better-heeled defendants. Public support for pulling the switch is clearly hedged with ifs and buts; it isn't easy to play God, even in the abstract." (Morganthau and Annin, *Newsweek*, June 16, 1997, pp. 26-27)

Question A1: Do we need the death penalty in our legal system? (25 points)

Question A2: What are the two issues discussed in the above article that matter when jurors make a death-penalty decision? (25 points)