

考試科目	財政學	所別	財政系 231 236	考試時間	4月20日上午 星期日 第一節
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一、名詞中譯英 或英譯中：

1. public utilities,
2. tax return,
3. defined benefit,
4. matching grants,
5. excise tax,
6. 水平公平,
7. 轉嫁與歸宿,
8. 營業稅,
9. 營利事業所得稅,
10. 減稅 (名詞)。 (25%)

二、小張昨日以多年的積蓄購買國產轎車一部，辦完一切手續，今天先去加油站加滿油，然後開到學校上課，車停在校外免收費的街道旁。從以上敘述，試問小張昨天和今天共負擔了那些稅費，並說明政府課他這些稅費學理上的理由。 (25%)

三、請擇一回答：

- (一) 請說明 Rawls (1971) 的 original position (原初之境況) 之緣由，此概念對「公平」或「公正」的分析有何貢獻？
- (二) 請說明 R. Musgrave 主要的財政思想。 (25%)

四、有人提出 (1) 兩部式定價法 (two-part tariff)；(2) 平均成本法；(3) $P = MC$ 加上虧損補貼；以改進自然獨占定價問題。試問：為何這些方法可以改進定價問題？真的實施這些方法還會有何新問題？應如何解決？ (25%)

備 考 試 題 隨 卷 繳 交

考試科目	經濟學(宏觀)	所別	財政	考試時間	4月20日上午 星期日	第一節
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國立政治大學圖書館

一、簡答題 (50points)

- (5 points) Explain how assuming that people have finite lifetimes and do not care about their children breaks Ricardian equivalence.
- (5 points) Take the Solow growth model and assume the economy is at the steady state ("stable equilibrium"). A natural disaster hits and some of the economy's capital is destroyed. Determine graphically the impact on the long-run quantity of capital per capita and output per capita.
- (5 points) Suppose the marginal product of labor is $MPN = 200 - 0.5N$, where N is aggregate employment. The aggregate quantity of labor supplied is $300 + 8w$, where w is the real wage. If a supply shock increases the marginal product of labor by 10 (to $MPN = 210 - 0.5N$), by how much does employment increase?
- (5 points) How many people are unemployed if the employment ratio is 75%, there are 90 million people employed, and there are 20 million people not in the labor force?
- (5 points) Explain how the effectiveness of a monetary expansion depends on the degree of capital mobility if the central bank sterilizes reserve flows.
- (15 points) Consider the following misperceptions model of the economy:

$$AD: Y = 600 + 10(M/P)$$

$$SRAS: Y = \bar{Y} + P - P^e$$

$$\text{Okun's Law: } (Y - \bar{Y})/\bar{Y} = -2.5(u - \bar{u})$$

Let $\bar{Y} = 750$, $\bar{u} = 0.05$, $M = 600$, and $P^e = 40$.

備考 試題隨卷繳交

命題委員:

- 72 -

(簽章) 92年4月6日

考試科目	經濟學(含國際)	所別	財政	考試時間	4月20日上午第一節 星期日 (下)
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- a. What is the price level?
- b. Suppose there is an unanticipated increase in the nominal money supply to 800. What is the short-run equilibrium level of output, the unemployment rate, and the price level?
- c. When price expectations adjust fully, what is the price level?

7. (10 points) How well do you know about the economy of Taiwan?

- (a) 消費者物價年增率 (請將提供的數據填入下列表格其所對應的年份, 全對才給分, -0.01%, -0.2%, 1.3%)

2000年	2001年	2002年

- (b) 女性勞動參與率 (請將提供的數據填入下列表格其所對應的年份, 全對才給分, 46.6%, 46.1%, 46.0%)

2000年	2001年	2002年

- (c) (0.88, 0.12)、(0.78, 0.22)、及 (1.27, -0.27) 三組資料中, 何組資料代表我國 2001 年家庭的 (邊際消費傾向, 邊際儲蓄傾向)? ()。

- (d) (US\$12572, US\$20877, US\$24014) 三個數據中, 何者代表我國 2002 年平均每人的 GDP? _____。

- (e) (5.8%, 5.17%, 4.4%) 三個數據中, 何者代表我國 2002 年的失業率? _____。

備 考 試 題 隨 卷 繳 交

命 題 委 員:

- 73 -

(簽章) 92年4月6日

考試科目	經濟學	所別	財政學系碩士班	考試時間	4月20日 上午 第一節 星期日 (下)
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國立政治大學圖書館

二、(50 points)

1. A firm producing output Y with the following production function, $Y = K^\alpha L^\beta$, where $\alpha, \beta > 0$, K, L are the only two inputs. Assuming the market price for K, L is r, w , respectively, and the firm is a competitive firm in the factor market:

- Derive a short run cost function and the long run cost function for this firm.
- If this is a competitive firm also in the output market, derive and explain the profit maximization conditions given the market price of Y is $p, p > 0$.
- If this is a monopolist in the output market, derive and explain the profit maximization conditions.

(30 points)

2. For the following four types of consumers all having M money income and facing $P_i, i=1, 2, \dots, n$, commodity price for good i , first derive the individual demand function for each good, then explain the effect of an increase in P_i on the demand for good $j, j=1, 2, \dots, n$.

(20 points)

$$(a) U = \sum_{i=1}^n \alpha_i \log X_i, \quad \alpha_i > 0, i=1, 2, \dots, n$$

$$(b) U = \sum_{i=1}^n X_i$$

$$(c) U = \sum_{i=1}^n X_i^2$$

$$(d) U = \min\left(\frac{X_1}{a_1}, \frac{X_2}{a_2}, \dots, \frac{X_n}{a_n}\right), \quad a_i > 0, i=1, 2, \dots, n$$

備 考 試 題 隨 卷 繳 交

命 題 委 員:

- 14 -

92/04/07

(簽章)

年

月

日

考試科目	會計學	所別	財政學系	考試時間	4月20日 星期 日 下午第二節
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一、Multiple Choice [@5%]

- On January 1, 2003, Fortune Co. sold 12% bonds with a face value of \$2,000,000. The bonds mature in five years, and interest is paid semiannually on June 30 and December 31. The bonds were sold for \$2,154,000 to yield 10%. Using the effective interest method of amortization, interest expense for 2003 is
 - \$200,000.
 - \$214,785
 - \$215,040.
 - \$240,000.
- Decision makers vary widely in the types of decisions they make, the methods of decision making they employ, the information they already possess or can obtain from other sources, and their ability to process information. Consequently, for information to be useful there must be a linkage between these users and the decisions they make. This link is
 - relevance.
 - reliability.
 - understandability.
 - materiality.
- An item that should be classified as an extraordinary item is
 - write-off of goodwill.
 - gains from transactions involving foreign currencies.
 - losses from moving a plant to another city.
 - gains from extinguishments of debt.
- During 2003 equipment was sold for \$60,000. The equipment cost \$84,000 and had a book value of \$48,000. "Accumulated Depreciation-Equipment" was \$322,000 at 1/1/2003 and \$345,000 at 12/31/2003. Depreciation expense for 2002 was
 - \$35,000.
 - \$47,000.
 - \$59,000.
 - \$71,000.
- When a company sells property and then leases it back, any gain on the sale should usually be
 - recognized in the current year.
 - recognized as a prior period adjustment.
 - recognized at the end of the lease.
 - deferred and recognized as income over the term of the lease.
- Tax rates other than the current tax rate may be used to calculate the deferred income tax amount on the balance sheet if
 - the future tax rates have been enacted into law.
 - it appears likely that a future tax rate will be greater than the current tax rate.
 - it is probable that a future tax rate change will occur.
 - it appears likely that a future tax rate will be less than the current tax rate.

備考 試題隨卷繳交

考試科目	會計學	所別	財政學系	考試時間	4月20日(週五) 下午第二節 星期日
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7. "Gains" on sales of treasury stock (using the cost method) should be credited to
- capital stock.
 - additional paid-in capital from treasury stock.
 - retained earnings.
 - other income.
8. Jennifer wants to invest a certain sum of money at the end of each year for five years. The investment will earn 6% compounded annually. At the end of five years, she will need a total of \$2,500,000 accumulated. How should she compute her required annual investment?
- \$2,500,000 times the amount of a 5-year, 6% ordinary annuity of 1.
 - \$2,500,000 times the present value of a 5-year, 6% ordinary annuity of 1.
 - \$2,500,000 divided by the amount of a 5-year, 6% ordinary annuity of 1.
 - \$2,500,000 divided by the present value of a 5-year, 6% ordinary annuity of 1.
9. The following information is available for Bend Company for 2003:
- | | |
|------------------|-----------|
| Freight-in | \$ 60,000 |
| Purchase returns | 80,000 |
| Selling expenses | 140,000 |
| Ending inventory | 160,000 |
- The cost of goods sold is equal to 500% of selling expenses. What is the cost of goods available for sale?
- \$860,000.
 - \$920,000.
 - \$840,000.
 - \$700,000.
10. The cash account shows a balance of \$360,000 before reconciliation. The bank statement does not include a deposit of \$23,000 made on the last day of the month. The bank statement shows a collection by the bank of \$7,500 and a customer's check for \$3,200 was returned because it was NSF. A customer's check for \$4,500 was recorded on the books as \$5,400, and a check written for \$790 was recorded on the books as \$970. The correct balance in the cash account was
- \$365,380.
 - \$363,580.
 - \$340,580.
 - none of these.

備 考 試 題 隨 卷 繳 交

考試科目	會計學	所別	財政學系	考試時間	4月20日 星期日	下午第二節
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二、台北公司 89、90、91 年純益分別為 \$1,000,000、\$1,100,000 與 \$1,200,000。92 年初會計師查帳時發現下列錯誤：

- (1) 89 年及 90 年底盤點存貨時，漏盤甲商品(89 年新商品)，致 89 年及 90 年期末存貨分別低估 \$100,000 與 \$120,000。91 年存貨並未漏盤，期末餘額正確。
- (2) 89 年 7 月初預付三年保險費 \$600,000，當年全額記為保險費用。
- (3) 89 年初預收三年租金共 \$660,000，當年全額記為租金收入。
- (4) 89 年初為某機器增添省電設備，支付成本 \$1,000,000，誤記為「修理費用」。增添之省電設備將隨機器報廢而報廢，沒有殘值。台北公司 87 年初購入該機器時，估計其耐用年限為 10 年，採直線法提列折舊。

試作：

- (1) 假設台北公司 91 年尚未結帳，其 91 年底帳上應作之更正分錄。
- (2) 89、90、91 年更正後純益各為若干？(回答本題時請不必考慮所得稅) [12%]

三、台南公司於 91 年 7 月 1 日買入並安裝一部價值 \$1,000,000 的機器於工廠內，估計該機器耐用年限 8 年，年限屆滿可售 \$100,000，假設台南公司採用曆年制，試作台南公司 91 年底及 92 年底有關該部機器之折舊分錄，假設(1)該公司採直線法提列折舊；(2)該公司採定率遞減法提列折舊(折舊率 25%) [12%]

四、台中公司為一研究機構，於民國 91 年初簽訂一項受託研究案，合約價格為 \$6,000,000，合約期間為 3 年，假設此項交易結果能合理估計，完成程度之估計採用已發生成本占估計總成本之比例計算，其他相關資料表列如下：

	91 年	92 年	93 年	合計
當年實際研究成本	\$ 1,620,000	\$ 2,160,000	\$ 1,620,000	\$ 5,400,000
估計至完成尚須投入成本	3,780,000	1,620,000	0	
分期請款金額	1,900,000	2,350,000	1,750,000	6,000,000
實際收款金額	1,700,000	2,300,000	2,000,000	6,000,000
完工比例	30%	70%	100%	

試作：

- (1) 民國 92 年紀錄成本、各期請款、實際收款及認列研究收入之分錄。
- (2) 民國 91 年及 92 年資產負債表上應收研究款金額各為若干？[14%]

五、台東公司採資產負債表法(應收帳款比率法)提列呆帳，91 年底應收帳款餘額為 \$2,000,000，備抵呆帳餘額為 \$40,000。假設該公司民國 92 年除銷收入為 \$8,000,000，應收帳款收現 \$7,500,000，91 年帳款中有 \$60,000 未能收回，轉列呆帳，試作 92 年度應收帳款發生、收現、沖銷及提列備抵呆帳之分錄。 [12%]

備 考 試 題 隨 卷 繳 交

考試科目	Calculus	所別	Public Finance	考試時間	4月20日 星期日	下午第2節
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1. Consider the demand function $F(p, q) = p + pq + q = 0$. Find $\frac{dq}{dp}$.
(5 points)

2. Consider the linear demand curve $Q = a - bP$. Show that the elasticity of demand is equal to -1 at the midpoint of the demand curve. (5 points)

3. $y = \frac{e^{ax} - e^{-ax}}{e^{ax} + e^{-ax}}$. Find $\frac{dy}{dx}$. (10 points)

4. Given the production function $Q = f(L, K)$, the elasticity of substitution of K for L is defined as: $E = \frac{dr}{dp} \frac{p}{r}$, where $r = \frac{K}{L}$, and $p = \frac{\partial Q / \partial L}{\partial Q / \partial K}$. Further assume you are given the following production

function: $Q = 20\left(\frac{1}{4}L^{-1/4} + \frac{3}{4}K^{-1/4}\right)^4$, show that $E = \frac{4}{5}$. (10 points)

5. Find the extremal, if any, of the functional $V[y] = \int_1^5 [3t + (y')^{1/2}] dt$ with boundary conditions $y(1) = 3$ and $y(5) = 7$. (10 points)

6. Assume that A and r are positive constants in the function $V = Ae^{rt}$, so that in general form we can write $V = f(t)$. What can be said about the curvature of this function? (10 points)

備考 試題隨卷繳交

命題委員：

-78-

(簽章) 92年4月6日

考試科目	Calculus	所別	Public Finance	考試時間	4月20日 星期日	下午第2節
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7. Suppose the supply function for a particular good is given (in NT dollars) by $S(q) = q^2 + 10q$, and the demand function is given by $D(q) = 900 - 20q - q^2$. Find the consumer's surplus and the producer's surplus. (10 points)

8. Evaluate $\int_1^2 \int_4^9 \frac{3+5y}{\sqrt{x}} dx dy$. (10 points)

9. Find the solution of the first-order differential equation $y' = \frac{xy}{x^2 + 1}$ that satisfies the condition $y(0) = 1$. (15 points)

10. A certain country's income distribution is described by the function $f(x) = \frac{15}{16}x^2 + \frac{1}{16}x$. (a) Sketch the Lorenz curve for this function. (5 points) (b) Compute the coefficient of inequality for the Lorenz curve. (10 points)

備 考 試 題 隨 卷 繳 交

命 題 委 員 :

-79-

(簽章) 92年4月6日

考試科目

統計學

所別

財政

231
236

考試時間

4月20日 上午第二節
星期日

國立政治大學圖書館

1. (15 points) In the following case, set up the null hypothesis and the alternative: Explain how you will proceed in testing the hypothesis.

Case: A tire manufacturer advertises that its tires last for at least 30,000 miles. A consumer group does not believe it.

In the problem above, can you identify the costs of mistaken decisions if we view the hypothesis-testing problem as a decision problem?

2. (20 points) In 1970, a random sample of 50 American men aged 35 to 54 showed the following relation between annual income Y (in dollars) and education X (in years).

$$\hat{Y} = 1200 + 800X$$

Average income was $\bar{Y} = \$10,000$ and the average education was $\bar{X} = 11.0$ years, with $\sum X^2 = 900$. The residual standard deviation about the fitted line was $s = \$7300$.

- Calculate a 95% confidence interval for the population slope.
- Is the relation of income to education statistically significant at the 5% significance level?
- Predict the income of a man who has completed 2 years of high school ($X = 10$). Include an interval wide enough that you would bet on it at odds of 95 to 5.
- Would it be fair to say that each year's education is worth \$800? Why?

3. (25 points) Consider the joint probability density function

$$f(x, y) = (0.6)^x (0.4)^{1-x} (0.3)^y (0.52)^{1-y} (2)^{-xy}$$

where the possible values for X and Y are $x = 0, 1$ and $y = 0, 1$. Find:

- The conditional density function $f(y | x = 0)$
- $E(X)$ and $Var(X)$
- $Cov(X, Y)$
- $E(X + Y)$

備考

試題隨卷繳交

命題委員：

-80-

(簽章) 92年4月7日

考試科目

統計學

所別

財政

考試時間

4月20日 上午 第二節
星期日

國立政治大學圖書館

4. (20 points) When S successes occur in n trials, the sample proportion $P = S/n$ customarily is used as an estimator of the probability of success π . However, sometimes there are good reasons to use the estimator $P^* \equiv (S+1)/(n+2)$. Alternatively, P^* can be written as a linear combination of the familiar estimator P :

$$P^* = \frac{nP+1}{n+2} = \left(\frac{n}{n+2}\right)P + \left(\frac{1}{n+2}\right)$$

- What is the mean squared error (MSE) of P ? Is it consistent?
- What is the mean squared error (MSE) of P^* ? Is it consistent?
- To decide which estimator is better, P or P^* , does consistency help? What criterion would help?
- Which estimator is better, P or P^* , when $n=10, \pi=0$?

5. (20 points) To compare three varieties of potatoes, an experiment was conducted by assigning each variety at random to 3 equal-size plots at each of 3 different soil types. The following yields, in bushels per plot, were recorded:

Soil	Variety of Potato		
	A	B	C
Sand	21	20	16
Clay	16	18	11
Loam	23	31	24

- Construct the ANOVA table
- Calculate the family of 95% simultaneous confidence intervals for the differences in the 3 varieties.
- The botanist who developed variety B remarked that he had worked 10 years to find something that grew well in a loam soil. As you glance at the data, do you think he succeeded? In the light of this information, what would you say about your analysis in parts a and b?

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試題隨卷繳交

命題委員：

-81-

(簽章) 92年4月7日