

國立政治大學 九十七學年度 碩士班暨碩士在職專班招生考試 命題紙

第 1 頁，共 2 頁

考試科目	財政學	所別	財政學系碩士 班 2131	考試時間	3 月 16 日 星期日	第一節
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壹

- 一、 隨著國內多項民生物資價格迭創新高，依現行「國內糧食救助作業要點」，各縣市政府得幫弱勢族群申請免費的糧食救助。又面對高齡化時代來臨，各縣市政府對中低收入老人提供多項服務：經濟補助、照顧服務、住宅服務、敬老優待、醫療補助等。試由效率面，輔以圖形比較分析實物補助與現金補助的異同。(15%)
- 二、 隨著永續經濟發展，各國環保政策戮力推動公害防治策略，致力於空氣品質維護、水質保護、土壤保護以及廢棄物、噪音、毒性化學物質管理等。為了達成環境保護目標，各國環保政策工具除命令管制工具外，亦採行經濟工具。試舉五個矯正外部性的措施，並配合圖形分析。(25%)
- 三、 我國為了推動公營事業民營化，制定「公營事業移轉民營條例」、「公營事業移轉民營條例施行細則」，另為加速推動民營化業務，成立「行政院公營事業民營化推動委員會」。試述公營事業民營化的目的及可能類型。(10%)

備 考 試 題 隨 卷 繳 交

命 題 委 員 ； (簽章) 97 年 3 月 6 日

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國立政治大學 九十七學年度 碩士班暨碩士在職專班招生考試 命題紙

第 2 頁，共 2 頁

考試科目	財政學	所別	財政所 2131	考試時間	3月16日 星期日	第 一 節
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貳：

- 一、(15分) 代表最低稅負制度(Alternative Minimum Tax, AMT)的「所得基本稅額條例」已於 2006 年開始實施。請依據妳(你)所學過的租稅理論，試分析評論目前台灣所實施的最低稅負制度，在稅基與稅率的訂定方向上，對效率與公平有何影響。(提示：請勿只單純介紹何謂 AMT 與法條內容，你必須提出相關理論來支持你的看法)
- 二、(20分) 2008 年台灣的總統大選正如火如荼地進行著，兩黨的候選人也分別針對台灣當前所面臨的財政與租稅問題提出各自的改革主張。其中，在美國實施已久的「勞動所得稅額扣抵(Earned Income Tax Credit, EITC)」也被提出討論。請回答以下問題：
- (1) 請簡單地說明何謂「勞動所得稅額扣抵(Earned Income Tax Credit, EITC)」。(5分)
 - (2) Tax credit 與 Tax deduction 有何相同與相異之處？(5分)
 - (3) EITC 本質上具有負所得稅制(Negative Income Tax)的概念。請以圖形分析說明，在線性負所得稅制之下，對受補助家庭而言，其勞動供給的影響為何。(10分) (題示：圖形橫座標為休閒，縱座標為勞動所得)
- 三、(15分) 請扼要但正確地解釋下列名詞 (提示：請勿只單純英翻中，你必須說明其主要意涵)
- (1) Ramsey Rule (3分)
 - (2) Lump-sum Tax (3分)
 - (3) Tax Capitalization (3分)
 - (4) Ricardian Equivalence (3分)
 - (5) Flypaper Effect (3分)

備 考 試 題 隨 卷 繳 交

命 題 委 員 ：

(簽章) 97 年 3 月 6 日

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考試科目	經濟學	所別	財政所 131	考試時間	3月16日 星期日	第 三 節
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1. (20分)

(1) Prove by a graph (or graphs) that competitive equilibrium is Pareto efficient.

(2) A monopolist produces a commodity y by the cost function $c(y) = y^2$ and it faces a demand curve $p = 200 - 3y$. Find out the equilibrium quantity and the equilibrium price if this monopolist adopts a first-degree price discrimination. Is this equilibrium Pareto efficient? Why or why not? Explain your answer clearly.

2. (10分) Suppose that you and many other students are participating an experiment. In the experiment, You and everybody else are informed to pick a number, any number, fraction or whole, between 0 and 100. The number closest to TWO THIRDS of the AVERAGE pick is the winner. So which number do you have to pick to win? Explain your reasoning clearly.

3. (20分) Mr. White is endowed with 16 hours per day to be allocated between working (L) and leisure (R). His preference over L and R is represented by the utility function $U(R, C) = R^{1/2} C^{1/2}$. He does not have non-labor income and all of his labor income is spent on a consumption good C . His wage rate is \$10 and the price of C is \$1.

(1) To maximize utility, how many hours should Mr. White work per day?

(2) If now his wage increases to \$20, but only for those hours of working exceeding that in (1). How many hours should Mr. White work now?

(3) Now consider a general case. An individual is endowed with a fixed amount of time \bar{R} . He faces a wage rate w and allocates \bar{R} between working (L) and leisure (R). Write down the Slutsky equation for this case.

備	考試 題 隨 卷 繳 交
命題委員：	(簽章) 年 月 日

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考試科目	經濟學	所別	財政學系 ₂₁₃₁	考試時間	3月16日 星期日 第三節
<p>4. Suppose that in addition to a lump-sum taxes, T_0, the government imposes an income tax with marginal tax rate t. Therefore, total tax revenue can be expressed as $T = T_0 + tY$, where Y represents the level of income. Let the IS curve equation be $Y = C(Y_d) + I(r) + G$, where $Y_d (= Y - T)$ is the disposable income; $I(r)$ is the investment function; r is the interest rate; and G is the government spending. 25%</p> <p>a. Compute the slope of the IS curve, $\frac{dr}{dY}$. Does the addition of income taxes make the IS curve flatter or steeper? 5%</p> <p>b. Holding T_0, t, and r constant, does the addition of income taxes make the government spending multiplier, $\frac{dY}{dG}$, bigger or smaller? Explain. 5%</p> <p>c. Suppose that the government is going to raise the marginal tax rate, t. If we define the budget deficit, D, as $G - T$, will this tax policy reduce the deficit? Explain. 5%</p> <p>d. Let the LM curve equation be $\frac{M^s}{P} = L(Y, r)$, where M^s is the money supply; P is the level of price; and $L(Y, r)$ is the demand for money. How will the tax policy of raising the marginal tax rate, t, affect the equilibrium income and interest rate in the context of the $IS-LM$ Model? Support your analytical results with a clearly drawn $IS-LM$ diagram. 10%</p> <p>5. The general price level has soared dramatically this year. 25%</p> <p>a. What are the main causes of inflation at this point in time? 5%</p> <p>b. What are the impacts of inflation of this case on the economy with regard to (1) economic growth, and (2) income distribution? 10%</p> <p>c. What kinds of policies, based on different views of schools of macroeconomics, can be implemented by the government to remedy it or to moderate the inverse impacts caused by it, in the short run and in the long run? 10%</p> <p>Indicate the advantages and the disadvantages of the policies you proposed.</p>					
備考	試題隨卷繳交				
命題委員：	(簽章) 97年3月7日				

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考試科目	會計學	所別	財政 231	考試時間	3月16日 星期日	第四節
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請於答案卷上作答，並請詳列計算過程。未詳列計算過程者不與計分。

1.(20%) 太平洋股份有限公司民國 96 年度有關每股盈餘的資料如下：

- (1) 本期稅前純益\$1,500,000，營利事業所得稅率 25%。
 - (2) 普通股，每股面額\$10，1月1日發行及流通在外普通股 800,000 股。
 - (3) 4月1日發行認股權證，得按每股\$30的價格認購普通股 100,000 股。8月1日有 30,000 股行使認股權證。普通股每股 4月1日至 8月1日的平均市價為\$27，4月1日到年底的平均市價為 \$ 33。
 - (4) 7月1日按面額發行 6%可轉換公司債 3,000 張，每張面額\$1,000，可轉換成普通股 50 股，每年 12月31日付息。
 - (5) 1月1日按面額發行 5%可轉換特別股 8,000，每股面額\$100，可轉換成普通股 5 股。
- 請計算該公司基本每股盈餘及稀釋每股盈餘。

2.(10%)大西洋公司在民國 97 年與民國 96 年 12 月 31 日除銷淨額分別為\$2,550,000 與\$1,800,000，試問甲公司在民國 97 年 12 月 31 日的速動比率與流動比率。

	民國 97 年 12 月 31 日	民國 96 年 12 月 31 日
現金	144,500	81,000
應收帳款(淨額)	382,500	360,000
商品存貨	459,000	378,000
短期有價證券	68,000	36,000
土地與建築物(淨額)	850,000	900,000
應付抵押票據(流動)	51,000	45,000
應收帳款與應計負債	204,000	198,000
短期應付票據	85,000	126,000

3.(5%)下列資料是有關印度洋公司在民國 96 年 12 月 31 日調整後試算表(所得稅費用除外)

借方		貸方	
現金	715,000	應付帳款	156,000
應收帳款(淨額)	2,145,000	普通股	650,000
預付稅捐	390,000	資本公積	884,000
外幣換算調整數	559,000	保留盈餘	819,000
費用	3,380,000	收入	4,680,000
	<u>7,189,000</u>		<u>7,189,000</u>

其他資料

- (1) 民國 96 年估計支付所得稅為\$390,000(將沖轉預付稅捐)，公司之所得稅費用分錄尚未入帳，所得稅稅率為 25%。
 - (2) 應收帳款中有\$600,000 同意顧客分四期，於每年 6 月 1 日及 12 月 1 日各付\$150,000。
- 試問印度洋公司在民國 96 年 12 月 31 日資產負債表中有關保留盈餘的金額應為多少？

備 考 試 題 隨 卷 繳 交

命 題 委 員 :

(簽章) 2008 年 3 月 / 日

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考試科目	會計學	所別	財政 2131	考試時間	3月16日 星期日	第四節
4.(5%)北海公司在民國 96 年發生下列電腦軟體研發成本：						
軟體開發設計費用				32,500		
分辨及測試建立技術可行性前之成本				25,000		
其他分辨成本發生在建立技術可行性之後				60,000		
其他測試成本發生在建立技術可行性之後				50,000		
生產產品母版成本				37,500		
複製軟體母版成本(1250 套)				62,500		
包裝費(500 套)				22,500		
試問北海公司在民國 96 年 12 月 31 日的資產負債表上應被資本化攤銷軟體成本應為多少？						
5. (5%)民國 96 年 12 月東海公司決定將一批快達耐用年限的設備作資產減損，在民國 96 年 12 月 31 日有關這批資產的資料如下：						
機器原始成本				\$500,000		
累計折舊				\$281,250		
預期未來繼續使用及報廢該資產的現金流量(為折現)				\$187,500		
機器的公平市價				\$156,250		
試問東海公司在民國 96 年 12 月 31 日的損益表中應報導之減損損失金額為多少？						
6. (5%)南海公司於民國 94 年 1 月 1 日購買一項應將利息資本化的資產，94 年 1 月 1 日支出一筆價款\$30,000，另於 95 年 1 月 1 日再支付餘款\$12,480，此項資產於 96 年 1 月 1 日安裝完成並啓用。該公司為購買該資產而於 94 年 1 月 1 日再借款\$18,000(年利率 6%)，另 94 年 1 月 1 日之前借入一筆長期借款\$30,000(年利率 5%)。試求南海公司因購買該項資產而於 95 年認列之資本化利息為多少？						
7.(10%).A number of major structural repairs completed at the beginning of the current fiscal year at a cost of \$1,850,000 are expected to extend the life of a building 5 years beyond the original estimate. The original cost of the building was \$5,000,000, and it has been depreciated by the straight-line method for 30 years. Estimated residual value is negligible and has been ignored. The related accumulated depreciation account after the depreciation adjustment at the end of the preceding fiscal year is \$3,000,000.						
(a) What has the amount of annual depreciation been in past years?						
(b) What was the original life estimate of the building?						
(c) What is the book value of the building after the extraordinary repairs have been made?						
(d) What is the expected remaining life of the building after the extraordinary repairs have been made?						
(e) What is the amount of straight-line depreciation for the current year, assuming that the repairs were completed at the very beginning of the current year?						

備 考 試 題 隨 卷 繳 交

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(簽章) 2008 年 3 月 / 日

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8(10%). Due to cash demand on May 1, the financial manager of Alpha Co. has two options to receive cash on time. One is the company signed a \$200,000, 90-day discounted note at the Delta bank. The discount rate was 8%, and the note was paid on July 31. The other is the company signed a 8% 3-month note borrows \$200,000 from Delta Bank.

Which of the two options is more favorable and why?

9(10%). On December 31, 2006, the tax accountants of Beta Sales inform the accountants that 65% of the current year's tax expense should be considered payable on March 15, 2007. The balance will be payable on March 15, 2008. Beta Sales journalizes any taxes payable within the next calendar year to Income Tax Payable and taxes due after the next calendar year to the Deferred Income Tax Payable account. The accountants determine that taxable income for the year 2006 \$200,000 and that the total income tax obligation is 25%.

- (a) Journalize the recognition of the tax obligations at the end of 2006.
- (b) Journalize the payment of the 2006 tax obligation on March 15, 2008.

10(20%). The comparative balance sheet of Gamma Company, for 2008 and the preceding year ended December 31, 2007 appears below in condensed form:

	<u>Year</u> <u>2008</u>	<u>Year</u> <u>2007</u>
Cash	\$56,250	\$66,875
Accounts receivable (net)	64,125	72,500
Inventories	184,000	168,750
Investments	0	75,000
Equipment	616,250	468,750
Accumulated depreciation-equipment	<u>(142,125)</u>	<u>(160,000)</u>
	<u>\$778,500</u>	<u>\$691,875</u>
Accounts payable	\$76,875	\$53,250
Bonds payable, due 2012	...	125,000
Common stock, \$10 par	312,500	250,000
Paid-in capital in excess of par-- common stock	93,750	62,500
Retained earnings	<u>295,375</u>	<u>201,125</u>
	<u>\$778,500</u>	<u>\$691,875</u>

備 考 試 題 隨 卷 繳 交

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The income statement for the current year is as follows:

Sales		\$778,750
Cost of merchandise sold		<u>435,625</u>
Gross profit		\$343,125
Operating expenses:		
Depreciation expense	\$30,875	
Other operating expenses	<u>94,125</u>	<u>125,000</u>
Income from operations		\$218,125
Other income:		
Gain on sale of investment	\$6,250	
Other expense:		
Interest expense	<u>15,000</u>	<u>(8,750)</u>
Income before income tax		\$209,375
Income tax		<u>80,125</u>
Net income		<u>\$129,250</u>

Additional data for the current year are as follows:

- (a) Fully depreciated equipment costing \$48,750 was scrapped, no salvage, and equipment was purchased for \$196,250.
- (b) Bonds payable for \$125,000 were retired by payment at their face amount.
- (c) 5,000 shares of common stock were issued at 18.75 for cash.
- (d) Cash dividends declared were paid \$35,000.
- (e) All sales are on account.

Prepare a statement of cash flows, using the direct method of reporting cash flows from operating activities.

備 考 試 題 隨 卷 繳 交

命 題 委 員 : (簽章) 2008 年 3 月 / 日

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考試科目	微積分	所別	財政	考試時間	3月16日 星期日	第4節
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10 points for each of the following ten questions:

- Find the value of $a + b$ for which the limit $\lim_{x \rightarrow \infty} \left(\frac{x^2 + 1}{x + 1} - ax - b \right) = -2$.
- Let $f : [0, \infty) \rightarrow \mathbb{R}$ be defined by $f(x) = \int_1^{x^3} \frac{dt}{\sqrt{1+t^2}}$.
 - Find the first derivative $f'(x)$ of $f(x)$.
 - Show that $f(x)$ has an inverse $f^{-1}(x)$ and compute $(f^{-1})'(0)$.
- Evaluate the following derivatives.
 - Let $f(x) = (1+x)^x$.
 - Let $g(x) = (x-1)(x-2)(x-3)(x-4)\dots(x-80)$, evaluate $g'(1)$.
- Evaluate the following integrals.
 - $\int_0^1 \frac{x^2}{(1+x)^7} dx$.
 - $\int_1^\infty \frac{x \ln x}{(1+x^2)^2} dx$.
- Calculate the approximate value of $\sqrt[3]{1001}$ by using the total differential.
- Evaluate $\int_0^1 \int_{x^2}^1 \frac{x^3}{\sqrt{x^4 + y^2}} dy dx$.
- Find the absolute maximum and minimum values of $f(x) = x^2 e^{-x}$ in $[0, \infty)$.
- Find the derivative $\frac{dy}{dx}$ of $x^2 + y^2 = 3x^2 y - y^3$ at $x = 1$ and $y = 1$.
- Find the area of the region enclosed by the curve $y^2 = x^2(4 - x^2)$.
- Assume that $u(x, y)$ satisfies the equation $\frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2} = 0$. Show that $v(x, y) = u\left(\frac{x}{x^2 + y^2}, \frac{y}{x^2 + y^2}\right)$ satisfies the equation $\frac{\partial^2 v}{\partial x^2} + \frac{\partial^2 v}{\partial y^2} = 0$.

備 考 試 題 隨 卷 繳 交

命 題 委 員 :

(簽章) 97年 3 月 日

命題紙使用說明：1. 試題將用原件印製，敬請使用黑色墨水正楷書寫或打字（紅色不能製版請勿使用）。
 2. 書寫時請勿超出格外，以免印製不清。
 3. 試題由郵寄遞者請以掛號寄出，以免遺失而示慎重。

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1. (10 points) Answer True or False; if false, correct it.
- (1) A and B are mutually exclusive if $\Pr(A \text{ and } B) = \Pr(A)\Pr(B)$.
- (2) If a fair coin has been fairly tossed 5 times and has come up tails each time, on the sixth toss the conditional probability of tails will be $1/64$.

2. (10 points) When is it true, or approximately true, that: (什麼時候以下等式會成立或大約成立?)

- (1) $E(X^2) = [E(X)]^2$? (2) $E(XY) = E(X)E(Y)$?

3. (10 points) Suppose X and Y have the following joint distribution:

		Y		
X		0	2	4
0		0.1	0.1	0
2		0.1	0.4	0.1
4		0	0.1	0.1

Find the following expected values:

- (1) $E(X^2 + Y^2)$ (2) $E(X - 2)(Y - 2)$

4. 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 another estimator P^* . Alternatively, P^* can be written as a linear combination of the familiar estimator P :

$$P^* \equiv (S+1)/(n+2) = [n/(n+2)]P + [1/(n+2)],$$

- (1) (10 points) What is the Mean Square Error (MSE) of P ? Is it consistent?
- (2) (10 points) What is the Mean Square Error (MSE) of P^* ? Is it consistent?
- (3) (5 points) State some possible circumstances when you might prefer to use P^* instead of P to estimate π .

5. (15 points) Consider the problem facing an air traffic controller at Chicago's Airport. If a small irregular dot appears on the screen, approaching the flight path of a large jet, she must decide between:

H_0 : All is well. It's only a bit of interference on the screen.

H_A : A collision with a small private plane is imminent.

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Question 5 is continued. Answer True or False; if false, correct it.

Statement: [If H_0 is true, a "false alarm" could occur, called a type II error. If H_A is true, a "missed alarm" could occur, called a type I error. By making the equipment more sensitive and reliable, it is possible to reduce the type I error only.]

6. A group of 4 physicians (醫生) hired a management consultant to see whether he could reduce the long waiting times of their patients (病患). He randomly sampled 200 patients, and found their waiting times had an average of 32 minutes, and a standard deviation of 15 minutes. To determine the factors that influence waiting time, he ran a multiple regression:

$$WAIT = a + b * DRLATE + c * PALATE + d * SHORT + \varepsilon,$$

where $WAIT$ = waiting time (in minutes), $DRLATE$ = the lateness of the doctors in arriving that morning (sum of their times, in minutes), $PALATE$ = the lateness of the patient in arriving for his appointment (in minutes), $SHORT = 1$ if the clinic (診所) was short staffed (醫師人力不足, 有人休假), and some of the appointments had to be rebooked (重新預約); 0 if fully staffed with all 4 physicians (四位醫師全部到齊), ε is the error term.

The regression results are shown in the following table:

Variables	Coefficients	Standard Error
Constant	22	
$DRLATE$	0.09	0.01
$PALATE$	-0.24	0.05
$SHORT$	2.61	0.82
R^2	0.72	

(1) Answer True or False; if False, correct it:

(a). (5 points) Since the coefficient of $SHORT$ is biggest, it is the most important factor in accounting for the variation in $WAIT$.

(b). (5 points) If he included another factor in the multiple regression, R^2 would necessarily be larger, as would the corrected (adjusted) \bar{R}^2 .

(2) (15 points) For each of the three coefficients (b, c, d), calculate the 95% confidence intervals, and t ratios.

(3) (5 points) At the 5% significance level, would $DRLATE$, $PALATE$, and $SHORT$ be statistically discernible (significant) factors?