

考試科目	經濟學(個體)	別	財政學	考試時間	七月九日① 星期六下午第二節
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## 一、個體經濟部分：

1. (15 points) Suppose John and Davis have decided to allocate \$1,000 per year on liquid refreshment in the form of alcoholic or nonalcoholic drinks. John and Davis differ substantially in their preferences for these two forms of refreshment. John prefers alcoholic to nonalcoholic drinks, while Davis prefers the nonalcoholic option.
  - a. Draw a set of indifference curves for John and a second set for Davis.
  - b. Discuss why the two sets of curves are different from each other using the concept of marginal rate of substitution.
  - c. If both Davis and John pay the same prices for their refreshments, will their marginal rates of substitution of alcoholic for nonalcoholic drinks be the same or different? Explain.
  
2. (15 points) Suppose that Anna's utility function is given by  $u(y) = y^{0.5}$ , where  $y$  represents annual income in thousands of dollars.
  - a. Is Anna risk loving, risk neutral, or risk averse? Explain.
  - b. Suppose that Anna is currently earning an income of \$16,000 ( $y = 16$ ) and can earn that income next year with certainty. She is offered a chance to take a new job that offers a 0.5 probability of earning \$36,000, and a 0.5 probability of earning \$9,000. Should she take the new job?
  - c. In (b), would Anna be willing to buy insurance to protect against the variable income associated with the new job? If so, how much would she be willing to pay for that insurance? (Hint: What is the risk premium?)
  
3. (20 points) A profit-maximizing monopolist is deciding how to charge price for two markets. The two markets are separated geographically (East Coast and Midwest). Demand and marginal revenue for the two markets are:
 
$$P_1 = 15 - Q_1, \quad MR_1 = 15 - 2Q_1$$

$$P_2 = 25 - 2Q_2, \quad MR_2 = 25 - 4Q_2$$
 The monopolist's total cost is  $C = 5 + 3(Q_1 + Q_2)$ . What is price for each market
  - a. if the monopolist can price discriminate?
  - b. if the law prohibits charging different prices in the two regions?

考試科目	經濟學 (總體部分)	系 別	財政系	考試時間	七月九日 星期六 下午第二節
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二、總體經濟部分：問答與計算題，每題五分，除了標示“\*”的題次為簡答題之外，其餘題目必須附計算過程或說明，否則不予計分

1. \*假設投資對生產的影響必須延後至下期才會產生，則本期的生產技術進步，下一期以後恢復為無進步的情況，在其他狀況不變下，本期的投資變化為何？(回答：“增加、減少、不變”三個答案之一即可)
2. 假設美國一  $x$  商品價格為 3 美元、美元在台灣的支付匯率為 33，則在購買力平價說成立以及不考慮運費與關稅等因素下， $x$  商品在台灣的售價為新台幣多少？
3. 依照 Solow 的新古典成長模型，請繪圖扼要說明當一國的折舊率上升時，恆定狀態 (steady-state) 下的該國每人的平均資本數變化為何？
4. \*承前一小題，此時恆定狀態下的該國的產出成長率變化為何？(回答：“增加、減少、不變”三個答案之一即可)
5. 在總合供需 AD-AS 模型當中，總合需求線上的任何一點其代表的貨幣市場是否為均衡狀態？(請先回答：“是、不是、不一定”三者之一後再加以解釋，否則不予計分)
6. 同樣在一般的 AD-AS 的模型下 (AD 曲線為負斜率、AS 曲線為正斜率)，則當 AS 曲線往右移時，名目的國內生產毛額變化為何？(請先回答：“增加、減少、不一定”三者之一後再加以解釋，否則不予計分)
7. \*考慮一簡單第一期為借款者的兩期消費者模型 (各期的利率、所得與課稅均外生決定)，若此消費者的效用函數為 Leontief 型式，當利率下降時，依照 Hicks 定義下的實質所得不變，則跨期替代效果使得第一期的消費變化為何？(回答：“增加、減少、不變”三個答案之一即可)
8. 考慮一代表性個人兩期消費模型，其經濟資料如下：

$$y_1 = 120, y_2 = 185, t_1 = 20, t_2 = 20, r = 10\%,$$

其中  $y_1$ 、 $y_2$  為第一期、第二期之所得， $t_1$ 、 $t_2$  為第一期、第二期之稅賦， $r$  為利率。則此代表性個人的終身所得為何？

9. 承前一小題，如果此人的效用函數為： $U(c_1, c_2) = \ln c_1 + \frac{1}{1+\rho} \ln c_2$ ，則此代表性個人消費的最適選擇  $c_1$ 、 $c_2$  為何？
10. \*假設中央銀行可以採取「增加」或「不增加」貨幣供給，廠商可以「提高」或「不提高」商品售價，所對應的中央銀行效用  $U_B$ ，以及廠商的效用  $U_F$ ，分別為下表所示。

	廠商售價「提高」	廠商售價「不提高」
央行貨幣供給「增加」	$U_F = 4, U_B = 3$	$U_F = 7, U_B = 1$
央行貨幣供給「不增加」	$U_F = 2, U_B = 1$	$U_F = 5, U_B = 4$

若中央銀行可以先公開宣示政策，則此問題的子賽局完全均衡解 (SPE) 下央行的效用值為何？



考試科目	初級會計學	系別	財政學系	考試時間	7月9日 上午 9:00 至 12:00 第四節
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作答方式：為維護您的權益，請依下列規定作答。

一、選擇題請於答案卷第一頁依下列方式作答

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15

二、問答題及計算題，一律以橫式書寫方式作答，並應清楚列示計算式

### 一、選擇題(45%)

- In a periodic inventory system, the entry to record a cash discount taken for early payment of merchandise would include:
  - a credit to inventory
  - a debit to sales discounts
  - a credit to purchase discounts
  - a credit to cost of goods sold
- At the end of the fiscal year, the usual adjusting entry for depreciation on equipment was omitted. Which of the following statements is true?
  - Total assets will be understated at the end of the current year.
  - The balance sheet and income statement will be misstated but the statement of owner's equity will be correct for the current year.
  - Net income will be overstated for the current year.
  - Total liabilities and total assets will be understated.
- A company with 100,000 authorized shares of \$4 par common stock issued 40,000 shares at \$8. Subsequently, the company declared a 2% stock dividend on a date when the market price was \$11 a share. What is the amount transferred from the retained earnings account to paid-in capital accounts as a result of the stock dividend?
  - \$3,200
  - \$6,400
  - \$4,800
  - \$8,800
- If merchandise inventory is being valued at cost and the price level is steadily rising, the method of costing that will yield the highest net income is
  - periodic
  - LIFO
  - FIFO
  - average
- Balance sheet and income statement data indicate the following:
 

Bonds payable, 8% (issued 1990, due 2015)	\$1,200,000
Preferred 8% stock, \$100 par (no change during the year)	200,000
Common stock, \$50 par (no change during the year)	1,000,000
Income before income tax for year	320,000
Income tax for year	80,000
Common dividends paid	60,000
Preferred dividends paid	16,000

考試科目	初級會計學	系別	財政系	考試時間	7月9日 上午 9:00 至 11:30 節四
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Based on the data presented above, what is the number of times bond interest charges were earned (round to two decimal places)?

- a. 5.67                      b. 4.33                      c. 3.24                      d. 3.50

6. A fixed asset with a cost of \$40,000 and accumulated depreciation of \$35,000 is traded for a similar asset priced at \$50,000. Assuming a trade-in allowance of \$3,000, the cost basis of the new asset is

- a. \$55,000                      b. \$48,000                      c. \$52,000                      d. \$50,000

7. The balance sheets at the end of each of the first two years of operations indicate the following:

	2006	2005
Total current assets	\$600,000	\$560,000
Total investments	60,000	40,000
Total property, plant, and equipment	900,000	700,000
Total current liabilities	150,000	80,000
Total long-term liabilities	350,000	250,000
Preferred 9% stock, \$100 par	100,000	100,000
Common stock, \$10 par	600,000	600,000
Paid-in capital in excess of par-common stock	60,000	60,000
Retained earnings	325,000	210,000

If net income is \$115,000 and interest expense is \$30,000 for 2006 what is the rate earned on total assets for 2006 (round percent to one decimal point)?

- a. 9.3%                      b. 10.1%                      c. 8.0%                      d. 7.4%

8. A and B are partners who share income in the ratio of 1:2 and have capital balances of \$40,000 and \$70,000 at the time they decide to terminate the partnership. After all noncash assets are sold and all liabilities are paid, there is a cash balance of \$80,000. What amount of loss on realization should be allocated to A?

- a. \$80,000                      b. \$10,000                      c. \$20,000                      d. \$30,000

9. The matching concept

- a. addresses the relationship between the journal and the balance sheet  
b. determines whether the normal balance of an account is a debit or credit  
c. requires that the dollar amount of debits equal the dollar amount of credits on a trial balance  
d. determines that expenses related to revenue be reported at the same time the revenue is reported

10. Based on the following data, what is the acid-test ratio, rounded to one decimal point?

Accounts payable	\$ 30,000
Accounts receivable	60,000
Accrued liabilities	5,000
Cash	30,000
Intangible assets	50,000
Inventory	69,000
Long-term investments	80,000
Long-term liabilities	100,000
Marketable securities	30,000
Fixed assets	670,000
Prepaid expenses	1,000

- a. 3.4                      b. 3.0                      c. 2.2                      d. 1.8



考試科目	初級會計學	系別	財政學系	考試時間	7月9日 上午 第 四 節 星期 五
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11. A company using the periodic inventory system has the following account balances: Merchandise Inventory at the beginning of the year, \$4,000; Transportation-In, \$450; Purchases, \$12,000; Purchases Returns and Allowances, \$2,300; Purchases Discounts, \$220. The cost of merchandise purchased is equal to
- \$13,930
  - \$9,930
  - \$9,489
  - \$14,520

12. A 90-day, 12% note for \$20,000, dated April 10, is received from a customer on account. If the note is discounted at 15% on May 10, the due date is
- July 9
  - July 10
  - July 11
  - July 8

13. A machine with a cost of \$65,000 has an estimated residual value of \$5,000 and an estimated life of 4 years or 18,000 hours. What is the amount of depreciation for the second full year, using the declining-balance method at double the straight-line rate?
- \$15,000
  - \$30,000
  - \$16,250
  - \$32,500

14. Given the following information:

Merchandise Inventory, Jan. 1	15,800
Merchandise Inventory, Dec. 31	17,600
Purchases	82,500
Purchase discounts	1,200
Purchase returns	1,800
Sales	115,800
Sales discounts	2,300
Sales returns	1,500
Transportation In	3,200

Compute the cost of goods sold.

- 82,700
  - 98,500
  - 80,900
  - 79,500
15. In recording the cost of merchandise sold for cash, based on data available from perpetual inventory records, the journal entry is
- debit Cost of Merchandise Sold; credit Sales
  - debit Cost of Merchandise Sold; credit Merchandise Inventory
  - debit Merchandise Inventory; credit Cost of Merchandise Sold
  - debit Accounts Receivable; credit Merchandise Inventory

考試科目	初級會計學	系別	財政學系	考試時間	7月9日 上午第 四 節 星期 六
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國立政治大學圖書館

## 二、問答題及計算題(55%)

- 1.(15%) The comparative balance sheet of Max Company, for 2006 and the preceding year ended December 31, 2005 appears below in condensed form:

	Year 2006	Year 2005
Cash	\$ 45,000	\$ 53,500
Accounts receivable (net)	51,300	58,000
Inventories	147,200	135,000
Investments	0	60,000
Equipment	493,000	375,000
Accumulated depreciation-equipment	(113,700)	(128,000)
	<u>\$622,800</u>	<u>\$553,500</u>
Accounts payable	\$ 61,500	\$ 42,600
Bonds payable, due 2012	.....	100,000
Common stock, \$10 par	250,000	200,000
Paid-in capital in excess of par-- common stock	75,000	50,000
Retained earnings	<u>236,300</u>	<u>160,900</u>
	<u>\$622,800</u>	<u>\$553,500</u>

The income statement for the current year is as follows:

Sales		\$623,000
Cost of merchandise sold		<u>348,500</u>
Gross profit		\$274,500
Operating expenses:		
Depreciation expense	\$24,700	
Other operating expenses	<u>75,300</u>	<u>100,000</u>
Income from operations		\$174,500
Other income:		
Gain on sale of investment	\$ 5,000	
Other expense:		
Interest expense	<u>12,000</u>	<u>(7,000)</u>
Income before income tax		\$167,500
Income tax		<u>64,100</u>
Net income		<u>\$103,400</u>

Additional data for the current year are as follows:

- Fully depreciated equipment costing \$39,000 was scrapped, no salvage, and equipment was purchased for \$157,000.
- Bonds payable for \$100,000 were retired by payment at their face amount.
- 5,000 shares of common stock were issued at 15 for cash.
- Cash dividends declared were paid \$28,000.
- All sales are on account.

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



考試科目	初級會計學	系別	財政學系	考試時間	7月9日 上午 9 時 至 12 時 第四節
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- 2.(15%) From the following data for Noll Company for the current fiscal year ended December 31, prepare a multiple-step income statement. Show parenthetically earnings per share for the following: income from continuing operations, loss on discontinued operations (less applicable income tax), income before extraordinary item, extraordinary item (less applicable income tax), and net income.

Common stock, \$50 par	\$200,000
Cost of merchandise sold	252,000
Administrative expenses	48,250
Income tax (applicable to continuing operations)	142,000
Interest expense	3,750
Loss on discontinued operations, net of applicable tax of \$2,700	5,400
Sales	775,000
Selling expenses	83,000
Uninsured flood loss, net of applicable income tax of \$4,500	14,000

- 3.(10%) Present entries to record the following selected transactions completed during the current fiscal year:

- Feb. 1 The board of directors reduced the par of common shares from \$100 to \$20. This action increased the number of outstanding shares to 500,000.
- 11 Purchased 25,000 shares of own stock at \$45, recording the treasury stock at cost.
- May 1 Declared a dividend of \$3 per share on the outstanding shares of common stock.
- 15 Paid the dividend declared on May 1.
- Oct. 19 Declared a 2% stock dividend on the common stock outstanding (the fair market value of the stock to be issued is \$55).
- Nov. 12 Issued the certificates for the common stock dividend declared on October 19.

- 4.(15%) From the following data, determine for the current year the (a) rate earned on total assets, (b) rate earned on stockholders' equity, (c) rate earned on common stockholders' equity, (d) earnings per share on common stock, (e) price-earnings ratio on common stock, and (f) dividend yield on common stock. Assume that the current market price per share of common stock is \$27. (Present key figures used in your computations.)

	Current Year	Preceding Year
Current assets	\$ 735,000	\$ 820,000
Property, plant, and equipment	1,500,000	1,400,000
Current liabilities		
(non-interest-bearing)	150,000	140,000
Long-term liabilities, 12%	400,000	400,000
Preferred 10% stock	250,000	250,000
Common stock, \$25 par	1,200,000	1,200,000
Retained earnings:		
Beginning of year	230,000	160,000
Net income for year	85,000	155,000
Preferred dividends declared	(25,000)	(25,000)
Common dividends declared	(60,000)	(60,000)

考試科目	微積分	系別	財政系	考試時間	7月9日 上午 第 四 節 星期六
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一、試描述以下兩方程式曲線之圖形，並詳細說明其特性：

$$1. y = \frac{x^2}{1+x}$$

$$2. x^2y + xy^2 = 2$$

(30 分)

二、設  $c$  為  $y$  之函數，故  $c = c(y)$ ，定義  $h(y) = \frac{c(y)}{y}$ ， $c, y \geq 0$ ，請說明  $h(y)$  呈現先遞減後遞增之充分必要條件。再舉一特定函數為例，說明  $c(y)$ ， $h(y)$  及該充分必要條件。

(20 分)

三、試求下列各式之近似值求法公式：

$$1. \sqrt{1+x}$$

$$2. \ln(1+x)$$

$$3. \sin(x)$$

(15 分)

四、試求下列積分：

$$1. I = \int \left( \frac{1}{x-a} + \frac{1}{(x-a)^k} \right) dx$$

$$2. I = \int \frac{(6x-5)}{2\sqrt{3x^2-5x+6}} dx$$

$$3. I = \int x^2 e^x dx$$

$$4. I = \int_{-1}^1 \frac{x^7 + 2x^5 + 8x}{\cos^4 x + 1} dx$$

$$5. I = \int_0^{\pi/2} \sqrt{x \sin x} dx$$

(35 分)