

考 試 科 目	經 濟 學	所 別	國際經營與貿易學系國際 經濟、國際財管、國際企 管與行銷組 4111	考 試 時 間	3 月 15 日 星期日	第 一 節
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1. (5 points) A consumer, Charlie, consumes only two goods: apples and bananas. Let  $A$  and  $B$  denote the quantity of apples and bananas, respectively; and  $p_A$  and  $p_B$ , the price of  $A$  and  $B$ . Charlie's preference can be represented by nice indifference curves which are bowed inward and he always spends all of his \$20 income. If he consumes  $(A, B) = (5, 5)$  when  $(p_A, p_B) = (2, 2)$  and  $(A, B) = (8, 6)$  when  $(p_A, p_B) = (1, 2)$ , then is apple a normal good or an inferior good for him? What about bananas?

2. (8 points) Consider the following two-good, two-consumer economy. Preferences and endowments are given by

$$u^1(x_1, x_2) = \min\{x_1, x_2\} \quad \text{and} \quad \omega^1 = (10, 0)$$

$$u^2(x_1, x_2) = \min\{x_1, x_2\} \quad \text{and} \quad \omega^2 = (0, 20).$$

Illustrate core and Walrasian equilibrium allocations in an Edgeworth box and explain briefly.

3. Consider a straw hat market consisting of 20 identical firms. There is an unlimited supply of straws and hence straws are free. The only cost incurred by each firm in the production is the wage paid to workers. The production function of each firm is given by  $Q(L) = 120 \cdot L - \frac{1}{2} \cdot L^2$ , where  $Q$  is the number of hats produced and  $L$  is the number of workers hired.

(i) (4 points) Suppose that each firm is a price taker in the product market and the price of a hat is \$10, what is the market demand for labor?

(ii) (4 points) Suppose that the market supply is given by  $w = L$ , what is the market equilibrium wage? Given the equilibrium wage, how many workers would each firm hire?

4. An aluminum factory emits pollution. Suppose for each unit of aluminum produced, the amount of smoke generated imposes a 2-dollar disutility on a villager who lives next to the factory. The villager's utility is normalized to zero when there is no pollution.

備	考 試 題 隨 卷 繳 交
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Each unit of aluminum produced can be sold in a competitive market for 5 dollars. The factory's marginal cost function is given by  $MC(q) = \frac{1}{10}q$ , and the fixed costs are zero. Suppose the factory's goal is to maximize profit; the villager, to maximize utility.

(i) (5 points) When the factory has the right to pollute and the transaction cost is high enough to prevent the parties from bargaining, what quantity of aluminum will the factory produce? Given this production, how much is the factory's profit? How much is the villager's utility?

(ii) (5 points) Suppose that the factory has the right to pollute but the transaction cost for reaching an agreement between the parties is zero, what quantity of aluminum will the factory produce? Given this production, how much is the factory's profit? How much is the villager's utility?

(iii) (5 points) What quantity of aluminum will a benevolent social planner choose to maximize the total surplus of the factory and the villager? Given this production, how much is the factory's profit? How much is the villager's utility?

5. Consider a monopolistic firm facing two buyers whose inverse demands are given by  $p_H = 10 - q_H$  and  $p_L = 8 - q_L$ , respectively. The marginal cost of producing the good is given by  $MC(q) = 2$ , and there are no fixed costs.

(i) (6 points) Suppose that the firm could identify the buyers, and it offers each buyer a take-it-or-leave-it price-quantity combination  $(p_i, q_i)$ ,  $i = H, L$ . What are the profit-maximizing price-quantity combinations? What is the maximum total profit earned from these combinations?

(ii) (4 points) Now suppose that the firm can not tell the buyers apart. If the firm offers the combinations in (i) to the buyers, how much profit can it earn?

(iii) (4 points) Can you suggest any pricing scheme, under which the firm earns a higher profit than that in (ii)?

備	考 試 題 隨 卷 繳 交
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**True/ False/ Uncertain Questions:** Decide whether each statement is true, false or uncertain, and justify your answer with a short argument.

6. An exogenous fall in exports cannot be blamed for an increased **budget deficit**. The only **exogenous variables** that affect the budget deficit are government spending and the tax rate. (6%)
7. Consider a company owned by a foreign businessman but producing in the Taiwan. In a given year a company spends \$100 on intermediate goods and \$200 in wages. It has sales for \$800. Hence, its contribution to Taiwan's GNP is the same as its value added, and it does not contribute value added to the GDP of the country where the businessman resides. (6%)
8. In a closed economy where there is only consumption, no government or investment and no inventory accumulation, the **GDP deflator** and the **CPI** should give exactly the same measure of inflation. (6%)

**Short Essays:** Answer the following two questions. Use graphs and equations to elucidate your answers as necessary.

9. Explain the "time inconsistency problem". (8%) How does this affect the central bank's monetary policy effectiveness? (8%) How can policy makers avoid such time inconsistency problem? (4%)
10. Suppose that a financial innovation makes the demand for money more interest-elastic. How does this affect the relative efficacy of monetary and fiscal policy? (12%)

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考試科目	統計學	所別	國際經營與貿易學系	考試時間	→ 月 5 日 星期日	第 → 節
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**Multiple-choice questions: Answer all questions. Each question has one correct answer. (50%)**

本科目之選擇題請在答案卡上作答

- Contents of similar 4 bottles of water are 8.8, 9.2, 8.5, and 9.0. Find the median.
  - 8.8
  - 8.9
  - 9.0
  - 8.875
  - None of the above
- Two lottery tickets are drawn from 10 for first and second prizes. The total number of sample points is given by:
  - 380
  - 0.9
  - 90
  - 45
  - None of the above
- From 5 economists and 3 physicists, the possible number of committees that can be formed consisting of 3 economists and 2 physicists is given by:
  - 10
  - 20
  - 30
  - 60
  - None of the above

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考 試 科 目	統計學	所 別	國際經營與貿易學系	考 試 時 間	3 月 15 日 星期 日	第 3 節
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For Questions 4 and 5, consider that there are three machines which produce the total amount of a product in a firm, and denote each machine as A, B, and C. A produces 20% of the total amount in a firm, while B produces 30% and C produces 50% of it. However, we know that 5%, 4%, and 2% of the product produced by A, B, and C, respectively, is the defective product. Suppose that you randomly pick one from the total.

4. The probability of the defective product is:

- A. 0.012
- B. 0.12
- C. 0.1
- D. 0.032
- E. None of the above.

5. The probability of the defective product produced by A is given by:

- A. 3/8
- B. 5/16
- C. 0.12
- D. 3/16
- E. None of the above

6. Contents of similar 7 bottles of water are 10, 5, 7, 8, 9, 9, and 6. Find the mode.

- A. 6
- B. 7
- C. 8
- D. 9
- E. 10

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	統計學	所別	國際經營與貿易學系	考試時間	3 月 15 日 星期日	第 3 節
------	-----	----	-----------	------	-----------------	-------

7. Let the joint density be

$$f(x, y) = x + y, \quad \text{for } 0 < x < 1 \text{ and } 0 < y < 1$$

$$= 0, \quad \text{otherwise}$$

The covariance of  $x$  and  $y$  is given by:

- A. 1/3
  - B. 1/12
  - C. -1/12
  - D. -1/144
  - E. None of the above.
8. Suppose that people in Chicago consisted of 40 percent Republicans and 60 percent Democrats (not actual figures). If 10% of the Republicans and 70% of the Democrats voted for an incumbent Senator "A", what is the probability that a person in Chicago who voted for the incumbent Senator "A" was a Democrat?
- A. 0.91
  - B. 0.42
  - C. 0.46
  - D. 0.28
  - E. None of the above

For Question 9-10, let  $Y$  denote the sample average from a random sample with mean  $\mu$  and variance  $\sigma^2$ . Consider two alternative estimators of  $\mu$ :  $W_1 = [(n-1)/n]\bar{Y}$  and  $W_2 = \bar{Y}/2$ .

9. Which of the following statements is true for  $W_1$  and  $W_2$ ?
- A. Both are biased estimators of  $\mu$  for a small  $n$ .

備	考試題隨卷繳交
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命題委員： \_\_\_\_\_ (簽章) \_\_\_\_\_ 年 \_\_\_\_\_ 月 \_\_\_\_\_ 日

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考試科目	統計學	所別	國際經營與貿易學系	考試時間	3月15日 星期日	第 3 節
------	-----	----	-----------	------	--------------	-------

- B.  $W_1$  is a biased estimator of  $\mu$  for a small  $n$  but  $W_2$  is an unbiased estimator of  $\mu$  for a small  $n$ .
- C. Both are unbiased estimators of  $\mu$  for a small  $n$ .
- D. None of the above.

10. Which of the following statements is true for  $W_1$  and  $W_2$ ?

- A.  $W_1$  is inconsistent but  $W_2$  is consistent.
- B.  $W_1$  is inconsistent and  $W_2$  is also inconsistent.
- C.  $W_1$  is consistent but  $W_2$  is inconsistent.
- D.  $W_1$  is consistent and  $W_2$  is also consistent.
- E. None of the above.

11. Consider positive random variable  $X$  and  $Y$ . Suppose that the expected value of  $Y$  given  $X$  is  $E(Y|X) = \delta X$  where  $\delta$  is an unknown parameter. The unknown parameter shows how the expected value of  $Y$  changes with  $X$ . Define a random variable  $Z = \frac{Y}{X}$ .  $E(Z)$  is given by:

- A.  $\delta X$
- B.  $\delta Y$
- C.  $1/\delta X$
- D.  $\delta$
- E. None of the above.

備	考試題隨卷繳交
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考試科目	統計學	所別	國際經營與貿易學系	考試時間	→ 月 15 日 星期 0	第 → 節
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For Question 12-13, suppose that  $X$  and  $Y$  have the following joint probability function where  $X$  takes 2 or 4 while  $Y$  takes 1, 3, or 5:

f(x,y)		x	
		2	4
y	1	0.1	0.15
	3	0.2	0.3
	5	0.1	0.15

12. The expected value of  $XY^2$  is given by:

- A. 30.5
- B. 62.5
- C. 48.5
- D. 35.2
- E. None of the above

13. The mean of  $X$  is given by:

- A. 3
- B. 3.2
- C. 3.5
- D. 4.5
- E. None of the above

14. Let  $X$ ,  $Y$ , and  $Z$  be *i.i.d.* random variables with a population mean  $\mu$  and variance  $\sigma^2$ . Denote  $W$  the mean

of those three random variables as  $W = \frac{1}{3}(X + Y + Z)$ . Consider a different estimator  $V$  as:

$$V = \frac{1}{3}X + \frac{1}{6}Y + \frac{1}{2}Z$$

備 考 試 題 隨 卷 繳 交

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考 試 科 目	統計學	所 別	國際經營與貿易學系	考 試 時 間	3 月 15 日 星期 B	第 3 節
---------	-----	-----	-----------	---------	------------------	-------

Which estimator,  $W$  or  $V$ , is better?

- A.  $V$
- B.  $W$
- C. Both. We cannot say either one is better.
- D. Not enough information to conclude

For Questions 15-16, consider a following relation between consumption and income estimated by using OLS:

$$\hat{Consumption} = -124 + 0.8(Income)$$

Consider that this is estimated by using observations for 100 families on annual income and consumption (both measured in dollars).

15. When you calculate the residuals, the sum should be:

- A. Close to zero
- B. Always positive
- C. Always negative
- D. Positive or negative
- E. None of the above

16. In the equation, compare the estimated marginal propensity to consume (MPC) out of income with the

estimated average propensity to consume (APC) is  $\frac{\hat{Consumption}}{Income}$ . What is the relation between the

MPC and APC as income goes to positive infinity?

- A. The MPC will be much larger than APC.
- B. Both will be closer.

備	考 試 題 隨 卷 繳 交
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考試科目	統計學	所別	國際經營與貿易學系	考試時間	→ 月 15 日 星期 日	第 → 節
------	-----	----	-----------	------	------------------	-------

C. The APC will be larger than MPC.

D. None of the above

For Questions 17-21, let *rent* be the average monthly rent on an apartment in a university town in Taiwan. Let *pop* be the total population in a city in Taiwan, *aveincome* be the mean city income, and *studentpop* the number of students as a percent of the total population in a city. One possible model to investigate a relation among those variables is:

$$\log(\text{rent}) = \beta_0 + \beta_1 \log(\text{pop}) + \beta_2 \log(\text{aveincome}) + \beta_3 (\text{studentpop}) + \varepsilon$$

17. Suppose that you would like to know whether the size of the student relative to the population influence the monthly rent. What are the null and alternative hypotheses?

A.  $H_0 : \beta_3 > 0, H_1 : \beta_3 < 0$

B.  $H_0 : \beta_3 = 0, H_1 : \beta_3 < 0$

C.  $H_0 : \beta_3 = 0, H_1 : \beta_3 > 0$

D.  $H_0 : \beta_3 = 0, H_1 : \beta_3 \neq 0$

E. None of the above

18. What signs do you expect for  $\beta_1$  and  $\beta_2$ ?

A. Both should be positive.

B.  $\beta_1$  should be positive but  $\beta_2$  should be negative.

C.  $\beta_1$  should be negative but  $\beta_2$  should be positive.

D. Both should be negative.

19. Suppose that you estimated  $\beta_1$  and got  $\hat{\beta}_1 = 0.5$  with 0.2 for its standard error. You can conclude that:

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------	-----	----	-----------	------	------------------	-------

- A. The total population does not have any influence on the rent.
- B.  $\beta_1$  is statistically different from zero.
- C. The average income does have any influence on the rent.
- D.  $\beta_1$  is statistically less than zero.
- E. None of the above.

20. Suppose that you estimated  $\beta_2$  and got  $\hat{\beta}_2=0.055$  with 0.002 for its standard error. You can conclude that:

- A. A 10% increase in the average income is associated with about a 5.5% increase in rent.
- B. A 10% increase in the average income is associated with about a 55% increase in rent.
- C. A 10% increase in the average income is associated with about a 0.55% increase in rent.
- D. A 1% increase in the average income is associated with about a 5.5% increase in rent.
- E. None of the above

21. Suppose that you got  $\hat{\beta}_3=0.005$  with its standard error 0.001. You can interpret it as:

- A. A 50 point ceteris paribus increase in *studentpop* is predicted to increase rent by 25%.
- B. A 50 point ceteris paribus increase in *studentpop* is predicted to increase rent by 0.25%.
- C. A 25 point ceteris paribus increase in *studentpop* is predicted to increase rent by 1.25%.
- D. A 25 point ceteris paribus increase in *studentpop* is predicted to increase rent by 0.125%.
- E. None of the above.

For Questions 22-23, now you estimated a new model as:

$$\log(\text{rent}) = \beta_0 + \beta_1 \log(\text{pop}) + \beta_2 \log(\text{aveincome}) + \beta_3(\text{studentpop}) + \beta_4(\text{studentpop})^2 + \varepsilon$$

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------	-----	----	-----------	------	--------------	-------

And got the following equation:

$$\log(\text{rent}) = 1.2 + 0.43 \log(\text{pop}) + 0.065 \log(\text{aveincome}) + 0.041(\text{studentpop}) - 0.00085(\text{studentpop})^2$$

22. What effect does the term, *studentpop*, have?

- A. An increasing effect on  $\log(\text{rent})$
- B. A diminishing effect on  $\log(\text{rent})$
- C. An interacting effect on  $\log(\text{aveincome})$
- D. An interacting effect on  $\log(\text{pop})$
- E. None of the above

23. At what point does the marginal effect of *studentpop* on  $\log(\text{rent})$  become negative?

- A. 0.041
- B. 48.24
- C. 0.00007
- D. 24.12
- E. None of the above

24. Consider the following model where *wage* is the wage you will receive, *educ* is the number of years of education, and *pareduc* is the total amount of both parents' education:

$$\log(\text{wage}) = \beta_0 + \beta_1 \text{educ} + \beta_2 \text{educ} \cdot \text{pareduc} + \varepsilon$$

What sign do you expect for  $\beta_2$ ?

- A. Positive
- B. Negative

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命題委員：		(簽章)	年	月

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------	-----	----	-----------	------	------------------	-------

C. Not obvious

D. Zero

E. None of the above

25. Let  $\hat{\beta}_0, \hat{\beta}_1, \dots, \hat{\beta}_k$  be the OLS estimates from the regression of  $y_i$  on  $x_{i1}, \dots, x_{ik}$ , where  $i = 1, 2, \dots, n$ . For nonzero constants  $c_0, c_1, \dots, c_k$ , which of the followings is true for the OLS intercept  $\tilde{\beta}_0$  and slopes  $\tilde{\beta}_1, \tilde{\beta}_2, \dots, \tilde{\beta}_k$  from the regression of  $c_0 y_i$  on  $c_1 x_{i1}, \dots, c_k x_{ik}$  where  $i = 1, 2, \dots, n$ ?

A.  $\tilde{\beta}_0 = (1/c_0)\hat{\beta}_0, \tilde{\beta}_1 = (c_1/c_0)\hat{\beta}_1, \dots, \text{ and } \tilde{\beta}_k = (c_k/c_0)\hat{\beta}_k$

B.  $\tilde{\beta}_0 = c_0\hat{\beta}_0, \tilde{\beta}_1 = c_1\hat{\beta}_1, \dots, \text{ and } \tilde{\beta}_k = c_k\hat{\beta}_k$

C.  $\tilde{\beta}_0 = \hat{\beta}_0, \tilde{\beta}_1 = c_1\hat{\beta}_1, \dots, \text{ and } \tilde{\beta}_k = c_k\hat{\beta}_k$

D.  $\tilde{\beta}_0 = \hat{\beta}_0, \tilde{\beta}_1 = (1/c_1)\hat{\beta}_1, \dots, \text{ and } \tilde{\beta}_k = (1/c_k)\hat{\beta}_k$

E.  $\tilde{\beta}_0 = c_0\hat{\beta}_0, \tilde{\beta}_1 = (c_0/c_1)\hat{\beta}_1, \dots, \text{ and } \tilde{\beta}_k = (c_0/c_k)\hat{\beta}_k$

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	統計學	所別	國貿所	考試時間	3月15日 星期日	第3節
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- (二) A Taipei City Government employee performed a regression analysis relating the current market value in NT dollars to the size in level ground (坪) of apartments in XinYi District, Taipei follows. The regression equation is:  $Value = -1,859 + 65 Size$ .

Predictor	Coef	SE Coef		
Constant	-1859	231.4		
Size	64.993	3.047		
Analysis of Variance				
Source	DF	SS	MS	
Regression	1	13548662082	13548662082	
Residual Error	33	982687392	29778406	
Total	34	14531349474		

- How many apartments were in the sample? (4 pts)
- Based on the regression equation, what is the estimated value of an apartment in XinYi District of size 20 坪? Is this a reasonable estimate? Explain. (5 pts)
- Determine and interpret the coefficient of determination. (5 pts)
- Determine the coefficient of correlation. How did you determine the sign of the correlation coefficient? (5 pts)
- Conduct a test of hypothesis to determine if there is significant positive association between the market value of apartments and the size of the apartment in level ground. Use the 0.01 significance level. (6 pts)

- (三) A university library ordinarily has a complete shelf inventory done once very year. Because of new shelving rules instituted the previous year, the head librarian feels that it may be possible to save money by postponing the inventory. The librarian decides to select at random 800 books from the library's collection and have them searched in a preliminary manner. If evidence indicates strongly that the true proportion of misshelved or unlocatable books is less than 0.02, then the inventory will be postponed.

- Among the 800 books searched, 12 were misshelved or unlocatable. Test the relevant hypothesis and advise the librarian what to do. Use  $\alpha = 0.05$ . (8 pts)
- What is the  $p$ -value of the data in (a)? (5 pts)
- If the true proportion of misshelved and lost books is actually 0.01, what is the probability that the inventory will be unnecessarily taken? (6 pts)
- If the true proportion is 0.05, what is the probability that the inventory will be postponed? (6 pts)

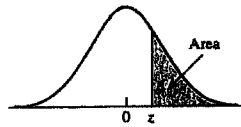
備 考試題隨卷繳交

命題委員： (簽章) 年 月 日

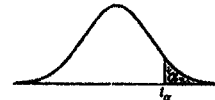
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考試科目	統計學	所別	國貿所	考試時間	3月15日 星期日	第3節
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Normal Curve Areas  
Standard normal probability in right-hand tail  
(for negative values of  $z$ , areas are found by symmetry)



Percentage Points of the  $t$  Distributions



z	Second decimal place of z									
	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
0.0	.5000	.4960	.4920	.4880	.4840	.4801	.4761	.4721	.4681	.4641
0.1	.4602	.4562	.4522	.4483	.4443	.4404	.4364	.4325	.4286	.4247
0.2	.4207	.4168	.4129	.4090	.4052	.4013	.3974	.3936	.3897	.3859
0.3	.3821	.3783	.3745	.3707	.3669	.3632	.3594	.3557	.3520	.3483
0.4	.3446	.3409	.3372	.3336	.3300	.3264	.3228	.3192	.3156	.3121
0.5	.3085	.3050	.3015	.2981	.2946	.2912	.2877	.2843	.2810	.2776
0.6	.2743	.2709	.2676	.2643	.2611	.2578	.2546	.2514	.2483	.2451
0.7	.2420	.2389	.2358	.2327	.2296	.2266	.2236	.2206	.2177	.2148
0.8	.2119	.2090	.2061	.2033	.2005	.1977	.1949	.1922	.1894	.1867
0.9	.1841	.1814	.1788	.1762	.1736	.1711	.1685	.1660	.1635	.1611
1.0	.1587	.1562	.1539	.1515	.1492	.1469	.1446	.1423	.1401	.1379
1.1	.1357	.1335	.1314	.1292	.1271	.1251	.1230	.1210	.1190	.1170
1.2	.1151	.1131	.1112	.1093	.1075	.1056	.1038	.1020	.1003	.0985
1.3	.0968	.0951	.0934	.0918	.0901	.0885	.0869	.0853	.0838	.0823
1.4	.0808	.0793	.0778	.0764	.0749	.0735	.0722	.0708	.0694	.0681
1.5	.0668	.0655	.0643	.0630	.0618	.0606	.0594	.0582	.0571	.0559
1.6	.0548	.0537	.0526	.0516	.0505	.0495	.0485	.0475	.0465	.0455
1.7	.0446	.0436	.0427	.0418	.0409	.0401	.0392	.0384	.0375	.0367
1.8	.0359	.0352	.0344	.0336	.0329	.0322	.0314	.0307	.0301	.0294
1.9	.0287	.0281	.0274	.0268	.0262	.0256	.0250	.0244	.0239	.0233
2.0	.0228	.0222	.0217	.0212	.0207	.0202	.0197	.0192	.0188	.0183
2.1	.0179	.0174	.0170	.0166	.0162	.0158	.0154	.0150	.0146	.0143
2.2	.0139	.0136	.0132	.0129	.0125	.0122	.0119	.0116	.0113	.0110
2.3	.0107	.0104	.0102	.0099	.0096	.0094	.0091	.0089	.0087	.0084
2.4	.0082	.0080	.0078	.0075	.0073	.0071	.0069	.0068	.0066	.0064
2.5	.0062	.0060	.0059	.0057	.0055	.0054	.0052	.0051	.0049	.0048
2.6	.0047	.0045	.0044	.0043	.0041	.0040	.0039	.0038	.0037	.0036
2.7	.0035	.0034	.0033	.0032	.0031	.0030	.0029	.0028	.0027	.0026
2.8	.0026	.0025	.0024	.0023	.0023	.0022	.0021	.0021	.0020	.0019
2.9	.0019	.0018	.0017	.0017	.0016	.0016	.0015	.0015	.0014	.0014
3.0	.00135									
3.5	.000233									
4.0	.0000317									
4.5	.00000340									
5.0	.000000287									

	$t_{.100}$	$t_{.050}$	$t_{.025}$	$t_{.010}$	$t_{.005}$	df
1	3.078	6.314	12.706	31.821	63.657	1
2	1.886	2.920	4.303	6.965	9.925	2
3	1.638	2.353	3.182	4.541	5.841	3
4	1.533	2.132	2.776	3.747	4.604	4
5	1.476	2.015	2.571	3.365	4.032	5
6	1.440	1.943	2.447	3.143	3.707	6
7	1.415	1.895	2.365	2.998	3.499	7
8	1.397	1.860	2.306	2.896	3.355	8
9	1.383	1.833	2.262	2.821	3.250	9
10	1.372	1.812	2.228	2.764	3.169	10
11	1.363	1.796	2.201	2.718	3.106	11
12	1.356	1.782	2.179	2.681	3.055	12
13	1.350	1.771	2.160	2.650	3.012	13
14	1.345	1.761	2.145	2.624	2.977	14
15	1.341	1.753	2.131	2.602	2.947	15
16	1.337	1.746	2.120	2.583	2.921	16
17	1.333	1.740	2.110	2.567	2.898	17
18	1.330	1.734	2.101	2.552	2.878	18
19	1.328	1.729	2.093	2.539	2.861	19
20	1.325	1.725	2.086	2.528	2.845	20
21	1.323	1.721	2.080	2.518	2.831	21
22	1.321	1.717	2.074	2.508	2.819	22
23	1.319	1.714	2.069	2.500	2.807	23
24	1.318	1.711	2.064	2.492	2.797	24
25	1.316	1.708	2.060	2.485	2.787	25
26	1.315	1.706	2.056	2.479	2.779	26
27	1.314	1.703	2.052	2.473	2.771	27
28	1.313	1.701	2.048	2.467	2.763	28
29	1.311	1.699	2.045	2.462	2.756	29
inf.	1.282	1.645	1.960	2.326	2.576	inf.

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	國際經營與貿易學系 國際經貿法組(17)	考 試 時 間	3 月 15 日 星期日	第 一 節
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1. Evaluate the statements below and explain why they are valid or invalid.
  - (i) (5 points) There will never be any gains from trade between two identical countries.
  - (ii) (5 points) Taipei City's MRT (Metropolitan Rapid Transit) system is a means of public transportation, therefore it is an example of public goods.
  - (iii) (5 points) A tax that has no deadweight loss cannot raise any revenue for the government.
2. (5 points) A monopolistically competitive firm faces a demand curve,  $P=24-Q$ , and earns zero profit. The firm produces at a constant marginal cost of 4. Find the fixed cost for this firm.
3. (5 points) Consider a competitive market whose demand is given by  $Q(p) = 250 - 10p$ . There are 120 identical firms in the market, each producing with a technology characterized by the total cost function,  $TC(q) = 4 + q + q^2$ , where  $q$  denotes the quantity produced by each firm. How many firms will remain in the market when it reaches the long run equilibrium.
4. (5 points) A consumer, Charlie, consumes only two goods: apples and bananas. Let  $A$  and  $B$  denote the quantity of apples and bananas, respectively; and  $p_A$  and  $p_B$ , the price of  $A$  and  $B$ . Charlie's preference can be represented by nice indifference curves which are bowed inward and he always spends all of his \$20 income. If he consumes  $(A, B) = (5, 5)$  when  $(p_A, p_B) = (2, 2)$  and  $(A, B) = (8, 6)$  when  $(p_A, p_B) = (1, 2)$ , then is apple a normal good or an inferior good for him? What about bananas?
5. An aluminum factory emits pollution. Suppose for each unit of aluminum produced, the amount of smoke generated imposes a 2-dollar disutility on a villager who lives next to the factory. The villager's utility is normalized to zero when there is no pollution. Each unit of aluminum produced can be sold in a competitive market for 5 dollars. The

備	考 試 題 隨 卷 繳 交
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考 試 科 目	經 濟 學	所 別	國際經營與貿易學系 國際經貿法組 4112	考 試 時 間	3 月 15 日 星期日	第 一 節
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factory's marginal cost function is given by  $MC(q) = \frac{1}{10}q$ , and the fixed costs are zero. Suppose the factory's goal is to maximize profit; the villager, to maximize utility.

(i) (5 points) When the factory has the right to pollute and the transaction cost is high enough to prevent the parties from bargaining, what quantity of aluminum will the factory produce? Given this production, how much is the factory's profit? How much is the villager's utility?

(ii) (5 points) Suppose that the factory has the right to pollute but the transaction cost for reaching an agreement between the parties is zero, what quantity of aluminum will the factory produce? Given this production, how much is the factory's profit? How much is the villager's utility?

(iii) (5 points) Suppose that the villager is entitled to compensatory damages from the factory, what quantity of aluminum will the factory produce? Given this production, how much is the factory's profit? How much is the villager's utility?

(iv) (5 points) What quantity of aluminum will a benevolent social planner choose to maximize the total surplus of the factory and the villager? Given this production, how much is the factory's profit? How much is the villager's utility?

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備	考 試 題 隨 卷 繳 交
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考試科目	經濟學	所別	國際經營與貿易學系 國際經貿法組 4112	考試時間	→月15日 星期日	第一節
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**True/ False/ Uncertain Questions:** Decide whether each statement is true, false or uncertain, and justify your answer with a short argument.

6. An increase in Honda car production in the Taiwan will increase Taiwan's **GNP** but have no effect on Japanese **GDP**. (6%)
7. A high **marginal propensity to consume** increases the effect of any expansion in **autonomous spending**. (6%)
8. Capital accumulation by itself can sustain growth in output per worker in the long term. (6%)

**Short Essays:** Answer the following two questions. Use graphs and equations to elucidate your answers as necessary.

9. Consider an IS-LM model. Suppose that there is a **reduction in the budget deficit**.
  - A. What does the reduction in the budget deficit mean? (4%)
  - B. Describe the effects of this reduction in the **short run** on interest rates, output and prices giving economic intuition for the changes. (8%)
  - C. Describe the effects of this reduction in the **long run** on interest rates, output and prices giving economic intuition for the changes. (8%)
10. Define **neutrality of money**. (4%) What does neutrality of money imply about the effectiveness of contractionary monetary policy in affecting output in the short-run and in the long-run? (8%)

備	考試題隨卷繳交
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命題委員： (簽章)

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考試科目	商事法及民法	所別	國際經營與貿易	考試時間	3月15日 星期日	第3節
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- 「臺灣高山咖啡」公司出產之三合一咖啡頗受消費者喜愛，不料竟在毒奶粉風波中被檢測出含有三聚氫氨，「臺灣高山咖啡」公司仔細檢查自身之製程及供貨商來源，結果發現是奶精供應商「維利」自中國山東廠商進貨所造成。「臺灣高山咖啡」除公開道歉並銷毀自賣場及消費者所回收之三合一咖啡外，亦趕換包裝，由三合一改為二合一，惟銷售情形已大受影響，「臺灣高山咖啡」公司因此決定向「維利」求償，請問有無理由？若「維利」主張其並不知情，則對「高山咖啡公司」之求償有無影響？(25%)
- 「艾梯股份有限公司」乃臺灣知名的上市公司，員工福利一向優渥，章程中並明訂每年稅後盈餘之25%應作為員工紅利。早年艾梯股價曾一度飆漲至新台幣300元，故員工多希望分配到的不是現金紅利，而是艾梯之股票，請問他們的希望在法律上可行嗎？(5%)對於員工因為上述分配而取得之股票，艾梯董事會可否決議限制員工於2年內不得轉讓，以免影響公司股價？(5%)近來由於金融海嘯，艾梯股價一度重挫至12元，為了挽救低迷的股價，請問艾梯公司可否在市場上買回自己的股份？(5%)儘管目前艾梯股價不高，但艾梯董事會認為未來上漲空間極大，故決定本年度向外挖角時，除了簽約金外，另加發一定數額的「認股權憑證」給挖到的員工，讓他們得以在未來3年內，以每股12元認購艾梯的股票，藉此吸引優秀人才。請問此舉在現行法律下可行嗎？(5%)艾梯為此而自公開市場上買回自己的股份，與前述為挽救股價而取得之自己股份，艾梯未來在處理上有何不同？(5%)
- A公司實收資本額500萬元，目前資產減去負債約有300萬元，計劃從事下列行為，請依相關法律規定說明是否合法：
  - (1) A公司將150萬現金貸予有業務往來的關係企業B公司。(5%)
  - (2) A公司向銀行擔保B之貸款。(5%)
  - (3) A公司將廠房抵押予銀行以擔保B公司之債務。(5%)
  - (4) B公司為調度資金簽發無記名支票一張予「F融資租賃公司」，惟F公司要求該支票應有他公司之背書保證，否則不予融資，於是B公司請求A公司於該支票上先行空白背書，然後再將支票交付予F公司。請問未來F向銀行提示請求付款而遭退票時，可否轉向A公司追索？(15%)
- 大西洋航運公司的「得意輪」採「貨櫃場(CY)」方式為「極上公司」運送貨物，因此於載貨證券上記載「貨櫃乙只，據告稱內裝燈具1000箱("1 container said to contain 1000 cartons of lamps")」。後貨物在目的港卸載，並經買受人C貿易商提貨，惟買受人C發現短少100箱，故主張大西洋航運公司做為運送人應負損害賠償責任。惟大西洋航運公司以載貨證券之記載為「據告稱(STC)」1000箱，故拒絕負責，請問大西洋航運之主張有無理由？(20%)

備 考 試 題 隨 卷 繳 交

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