

國立中正大學

109 學年度碩士班招生考試

試題

[第 1 節]

科目名稱	個體經濟學
系所組別	經濟學系國際經濟學-甲組

—作答注意事項—

※作答前請先核對「試題」、「試卷」與「准考證」之系所組別、科目名稱是否相符。

1. 預備鈴響時即可入場，但至考試開始鈴響前，不得翻閱試題，並不得書寫、畫記、作答。
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3. 入場後於考試開始 40 分鐘內不得離場。
4. 全部答題均須在試卷（答案卷）作答區內完成。
5. 試卷作答限用藍色或黑色筆（含鉛筆）書寫。
6. 試題須隨試卷繳還。

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科目名稱：個體經濟學

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系所組別：經濟學系國際經濟學-甲組

一、單選題 (1-25 題, 每題 2 分, 26-30 題, 每題 4 分, 共 70 分) :

1. Consider a budget constraint of two goods, x and y . If the prices of both goods are doubled and the consumer's income is tripled, the budget constraint
(A) will become steeper.
(B) will become flatter.
(C) will have a parallel downward shift.
(D) will have a parallel upward shift.
2. If Jim likes exercise (x) but hates homework (y), which of the following might best represent his utility function for exercise and homework?
(A) $U(x, y) = x + y$ (B) $U(x, y) = \frac{x}{y}$ (C) $U(x, y) = x^2 + \sqrt{y}$ (D) $U(x, y) = x^2 \sqrt{y}$
3. Suppose the demand function for a good is expressed as $Q = 40 - 2p$. If the good currently sells for \$5, then the price elasticity of demand equals
(A) -1/3 (B) -1 (C) -2 (D) -1/2
4. Consider a utility function $U = \min\{2x, y\}$. The equation $y = 2x$ is
(A) the p_1 price offer curve.
(B) the p_2 price offer curve.
(C) the income offer curve.
(D) All of the above.
5. Leo consumes two goods, x and y . When prices are $(p_x, p_y) = (2, 2)$, he consumes bundle A $(x, y) = (3, 3)$. When $(p_x, p_y) = (5, 3)$, he consumes bundle B $(x, y) = (2, 1)$.
(A) It is revealed that he prefers bundle A to bundle B.
(B) It is revealed that he prefers bundle B to bundle A.
(C) It is revealed that he prefers bundle A to bundle B and bundle B to A.
(D) The information is not enough to tell which bundle he likes more.
6. Jenny's utility function is $U = x_1^{1/2} x_2^{1/2}$, where x_1 is her consumption (in dollar) in period 1 and x_2 is her consumption in period 2. Jenny's income in the first period is \$100 and that in the second period is

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科目名稱：個體經濟學

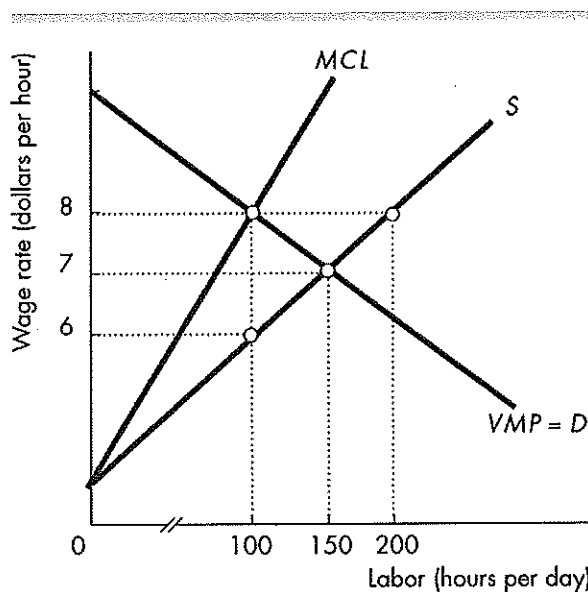
本科目共 8 頁 第 2 頁

系所組別：經濟學系國際經濟學-甲組

- \$110. The market interest rate is 20%, and Jenny can borrow or save at this interest rate. To maximize her utility,
- (A) she will save in the first period.
 - (B) she will borrow in the first period.
 - (C) she will spend \$100 in the first period.
 - (D) None of the above is correct.
7. Consider a utility function with two goods, x and y . If there is a change in p_1 , the compensating variation and the equivalent variation are always equal if the utility function is:
- (A) $U = x + y$
 - (B) $U = \sqrt{x} + y$
 - (C) $U = \min(x, y)$
 - (D) $U = xy$
8. If the supply is perfectly inelastic:
- (A) The supply curve is horizontal.
 - (B) The equilibrium quantity is independent of the price.
 - (C) An increase in demand will change the equilibrium quantity but not the price.
 - (D) The price elasticity of supply is 1.
9. The production function of a firm is $y = 2x^{1/2}$. The price of the output is $p_y = 10$ and the price of the input is $p_x = 2$. To maximize the profit, how many units of y should the firm produce?
- (A) 5
 - (B) 10
 - (C) 20
 - (D) 25
10. Which statement about cost functions is correct?
- (A) The average fixed cost does not change with the quantity of output.
 - (B) The difference between the average cost and the average variable cost is the marginal cost.
 - (C) If the marginal cost is greater than the average variable cost, the average cost will be decreasing with an increase in the quantity of output.
 - (D) If the market price is greater than the average variable cost but is lower than the average cost, the firm will continue to operate in the market even it is making a negative profit.
11. If a union is able to decrease the supply of workers in a competitive labor market but the union cannot affect the demand for its members' labor, then
- (A) wages and the quantity of labor hired will both increase.
 - (B) wages will increase but the quantity of labor hired will decrease.
 - (C) wages will decrease but the quantity of labor hired will increase.
 - (D) wages and the quantity of labor hired will both decrease.

12. Which of the following methods is used by unions to increase the demand for the labor of its members?

- (A) Decrease the marginal product of union members.
- (B) Support minimum wage laws.
- (C) Oppose import restrictions.
- (D) Decrease demand for the goods produced.



13. The marginal cost of labor (MCL), the labor supply (S) and the labor demand (D) are plotted in the above figure. Choose the correct statement

- (A) The monopsony wage rate is \$6.00 and the quantity of labor is 100 hours.
- (B) The competitive wage rate is \$8.00 and the quantity of labor is 100 hours.
- (C) If the minimum wage rate is \$7.00, then the monopsony quantity of labor is 150 hours.
- (D) None of the above is correct.

14. Mel's utility of wealth is 130 units at \$3,000, 160 units at \$5,000, and 190 units at \$9,000. Starting from zero wealth, he must choose between options A and B. Option A gives him \$5,000 for sure. Option B gives him \$3,000 with probability 0.4 or \$9,000 with probability 0.6. Mel

- (A) will choose A.
- (B) will choose B.
- (C) is indifferent between A and B.
- (D) needs more information to make a choice.

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科目名稱：個體經濟學

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系所組別：經濟學系國際經濟學-甲組

15. Dane has a car valued at \$20,000 that gives him a utility of 80. There is a 5 percent chance that he will have an accident that will make his car worthless, in which case his utility will be zero. His utility from a wealth of \$15,000 is 76. The maximum amount Dane will be willing to pay for insurance is
 (A) \$1,000. (B) \$3,000. (C) \$5,000. (D) \$15,000.

Wealth (dollars)	Total utility
0	0
20,000	200
40,000	245
60,000	270
80,000	287
100,000	300

16. Anna spent her entire wealth of \$100,000 to build a beach house on T-city. There is a 10 percent chance that the house will be totally destroyed by a typhoon. Anna's utility of wealth schedule is given in the table above. What is the minimum amount that the insurance company would require Anna to pay for an insurance policy that pays \$100,000 if her beach house is destroyed by a hurricane? (Assume the insurance company has no other costs.)
 (A) \$10,000 (B) \$30,000 (C) \$40,000 (D) \$60,000
17. Following Question 16, What is the maximum amount that Anna would be willing to pay for an insurance policy that pays \$100,000 if her beach house is destroyed by a typhoon?
 (A) \$10,000 (B) \$30,000 (C) \$40,000 (D) \$60,000
18. Suppose that there are only two types of used cars, peaches and lemons. The used cars are pure experience goods. Peaches are worth \$10,000, and lemons are worth \$6,000. Three-fourths of all used cars are peaches, and one fourth are lemons. In a market with no signals, for instance, a market without warranties, the average value of cars actually sold will be
 (A) \$6,000. (B) \$7,000. (C) \$9,000. (D) \$10,000.
19. Which of the following statement is ALWAYS true in a perfectly competitive market?
 (A) If a firm produces some outputs, the equilibrium price is higher than the average variable cost in the short run.

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科目名稱：個體經濟學

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系所組別：經濟學系國際經濟學-甲組

(B) If firms exist from or enter into the market, the average cost of the remaining firms will be changed.

(C) The equilibrium price is always higher than the marginal cost in the short run.

(D) None of the above is correct.

20. Which of the following is a characteristic of a monopoly?

(A) The firm faces competition from a few other firms.

(B) The firm produces a product that has many close substitutes.

(C) There are barriers to enter the market.

(D) The firm's demand curve is perfectly elastic.

21. Which of the following can create a monopoly?

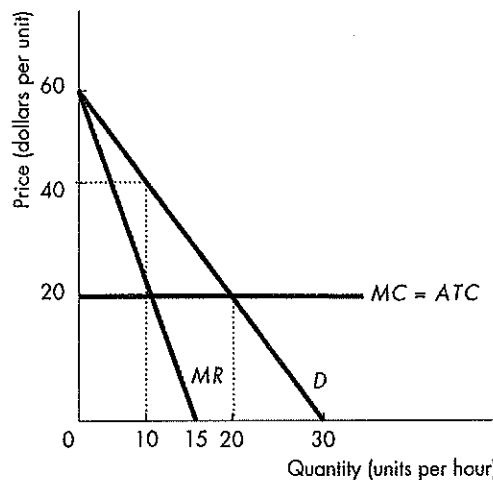
I. high prices II. public franchise III. patent IV. government license

(A) I and II

(B) I and III

(C) I, II and III

(D) II, III and IV



22. The above figure shows the demand and cost curves for a monopolist. If the monopolist can perfectly price-discriminate consumers, what is the maximum economic profit this firm can make?

(A) zero

(B) \$400

(C) \$100

(D) \$200

23. For a single-price monopolist to sell one more unit of a good, it must

(A) lower the price on just the last unit sold.

(B) lower the price on all units sold.

(C) raise the price on just the last unit sold.

(D) raise the price on all units sold.

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系所組別：經濟學系國際經濟學-甲組

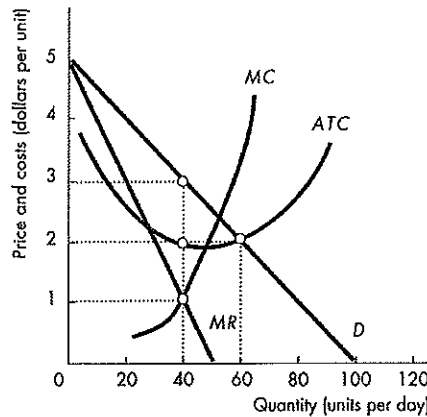
24. The key feature of monopolistic competition that distinguishes it from the perfect competition is
- (A) many sellers.
 - (B) barriers to entry.
 - (C) interdependency.
 - (D) product differentiation.
25. The general message of the folk theorems in the game theory is that
- (A) Nash equilibria may not be sustainable over many replications of a game.
 - (B) Payoffs that are unambiguously preferred to Nash equilibria may be sustainable over many replications of a game.
 - (C) Just plain folk play the best games.
 - (D) None of the above is correct.
26. Suppose that there are two firms, firm 1 and firm 2 in the market. Each of them respectively produces q_1 and q_2 units of homogenous goods. The inverse demand function is $p = 100 - q_1 - q_2$, and there is no production cost. If both firms independently and simultaneously choose q_1 and q_2 , what is the Nash equilibrium quantities in the game? That is, $q_1 = q_2 =$
- (A) 23.3. (B) 33.3. (C) 43.3. (D) 13.3.
27. Following Question 26, let firm 1 decide q_1 first, followed by firm 2 making a decision on q_2 . What is the subgame-perfect Nash equilibrium quantities in the game?
- (A) $q_1 = 50, q_2 = 25$. (B) $q_1 = 40, q_2 = 30$. (C) $q_1 = 42, q_2 = 29$. (D) $q_1 = 46, q_2 = 27$.
28. A trigger strategy is one in which a player
- (A) cooperates in the current period if the other player cooperated in the previous period, but cheats in the current period only if the other player cheated in the previous period.
 - (B) cheats in the current period if the other player cooperated in the previous period, but cooperates in the current period if the other player cheated in the previous period.
 - (C) cooperates in the current period if the other player has always cooperated, but cheats forever if the other player ever cheats.
 - (D) cheats in the current period if the other player has always cheated, but cooperates forever if the other player has ever cooperated.

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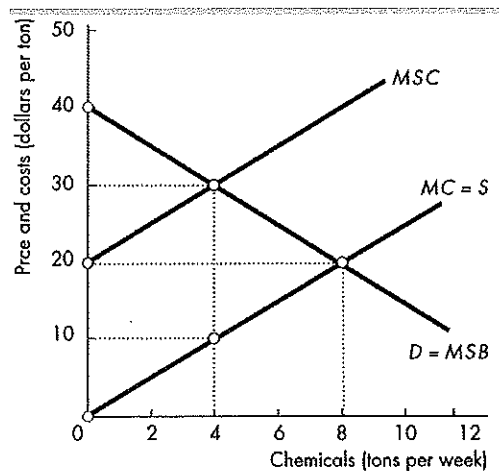
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系所組別：經濟學系國際經濟學-甲組



29. In the above figure, the firm is in monopolistic competition. Choose the correct statement.

- (A) It can not be equilibrium in the long run.
- (B) It induces entry of potential firms and the average cost curve will be moved upward.
- (C) It induces the exit of incumbent firms.
- (D) None of the above statements is correct.



30. A chemical factory and a fishing club share a lake. Producing chemicals creates water pollution that harms the fish. The marginal social cost(MSC), private marginal cost(MC), and marginal social benefit (MSB) from producing chemicals are in the figure above. Choose the correct statement.

- (A) If polluting is legal and no one owns the lake into which waste is dumped, then the number of chemicals produced each week will be 4 tons.
- (B) If polluting is legal and no one owns the lake into which waste is dumped, but now they begin to damage the fishing boats as well, then the marginal benefit curve shifts leftward.
- (C) If transaction costs are low and the chemical factory is given ownership of the lake, then the number of chemicals produced each week will be 4 tons.
- (D) None of the above answers is correct.

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系所組別：經濟學系國際經濟學-甲組

二、填空题 (每格 5 分，共 30 分)：

(1) 共有6個空格，請不要使用作答區第一頁「選擇題作答區」作答。於「選擇題作答區」下方自行製作如下1-6格答題區。

第1格		第4格	
第2格		第5格	
第3格		第6格	

(2) 填空题不需計算過程，僅依答案格內的答案對錯給分。

(3) 若無特別說明，請將答案約分至最簡分數。

- Jack's utility function is $U = \min\{4x, 2y\} + z$. Suppose $p_x = 4$, $p_y = 2$, and $p_z = 3$. If Jack's income is 60, his optimal consumption bundle is $(x, y, z) = \underline{\hspace{2cm}} (1) \underline{\hspace{2cm}}$.
- Lucy's utility function is $U = \sqrt{m}$, where m is her income. She initially has \$100, and her objective is to maximize the expected utility level. Suppose that she can bet her \$100 in a game: with a 50% chance she loses it and has \$0, and with a 50% chance she wins it and has \$ x . What is the minimal value of x that she will take the bet? $\underline{\hspace{2cm}} (2) \underline{\hspace{2cm}}$.
- A consumer has a utility function $U = x^{1/3}y^{2/3}$ and his budget constraint is $p_x x + p_y y = m$.
 - Derive his demand function for x . $\underline{\hspace{2cm}} (3) \underline{\hspace{2cm}}$.
 - What is the slope of the Engel curve of x ? (put x on the horizontal axis) $\underline{\hspace{2cm}} (4) \underline{\hspace{2cm}}$.
- The inverse demand function of ice cream is $P = 30 - Q^D$, and the inverse supply function is $P = 5Q^S$. If the government imposes a \$6 excise tax, the deadweight loss of this policy is $\underline{\hspace{2cm}} (5) \underline{\hspace{2cm}}$.
- A firm produces the output y with two inputs, x_1 and x_2 , and the production function is $y = x_1^{1/4}x_2^{3/4}$. If the price of x_1 is 3 and the price of x_2 is 6, then the cheapest way to produce the output requires using the two inputs in the ratio $x_1/x_2 = \underline{\hspace{2cm}} (6) \underline{\hspace{2cm}}$.

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試題

[第 1 節]

科目名稱	微積分
系所組別	經濟學系國際經濟學-乙組

—作答注意事項—

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科目名稱：微積分

本科目共 1 頁 第 1 頁

系所組別：經濟學系國際經濟學-乙組

請回答下述問題（並詳述推理與計算過程）。

1. Let $F : [a, b] \rightarrow \mathbb{R}$ be a bounded real-valued function defined on some closed interval $[a, b]$, and let $c \in (a, b)$. Please write down the (ϵ, δ) -definition for the following statements:

- (1) $F(x)$ is continuous at $x = c$. (5pts.)
- (2) $F(x)$ is differentiable at $x = c$. (5pts.)

2. Test the convergence of the following series.

- (1) $\sum_{n=1}^{\infty} (-1)^n$. (10pts.)
- (2) $\sum_{n=1}^{\infty} (-\frac{1}{2})^n$. (10pts.)
- (3) $\sum_{n=1}^{\infty} \frac{n}{n^2+5}$. (10pts.)

3. Find $\frac{dy}{dx}$ for each following equation:

- (1) $xy^2 + x^2 = 3x + y$. (5pts.)
- (2) $x^y = y^{2x}$. (5pts.)

4. Evaluate the following improper integrals:

- (1) $\int \frac{3}{2+e^x} dx$. (5pts.)
- (2) $\int x^2 \ln \sqrt{x} dx$. (5pts.)

5. Evaluate the following integrals:

- (1) $\int_0^{\infty} e^{-\frac{1}{2}x^2} dx$. (5pts.)
- (2) $\int_0^1 \frac{x^2}{x^3+1} dx$. (5pts.)

6. Find the Taylor approximation of order two for each following function at the given point:

- (1) $g(x) = e^{-x^2}$ at $x = 0$. (10pts.)
- (2) $G(x, y) = e^y \ln(x + y)$ at $(x, y) = (1, 0)$. (10pts.)

7. Find the maximal value of $g(x, y) = x^{\frac{1}{2}}y^{\frac{1}{2}}$ in the following set:

$$\{(x, y) \in \mathbb{R}_+^2 \mid 2x + 2y \leq 5\}.$$

Moreover, what are the corresponding values of x^* and y^* such that $g(x^*, y^*)$ attains the maximal value? (10pts.)

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試題

[第 2 節]

科目名稱	經濟學
系所組別	經濟學系國際經濟學-乙組

一作答注意事項一

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科目名稱：經濟學

本科目共 5 頁 第 1 頁

系所組別：經濟學系國際經濟學-乙組

第一部分：單選題（60分）

- (1) 依照題號順序，將答案寫在答案卷第一頁選擇題作答區對應題號的空格內(第 1~20 格)。
- (2) 每格答對得 3 分，答錯或未作答得 0 分。
- (3) 答題不要求任何計算過程，只依答案格內的答案對錯給分。

- [illegible]

(請翻次頁，繼續作答)

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科目名稱：經濟學

本科目共 5 頁 第 2 頁

系所組別：經濟學系國際經濟學-乙組

8. 如果經濟體的均衡產出低於潛在產出水準時，下列敘述何者正確？
【A】產生通貨膨脹缺口，應採取擴張性財政政策
【B】產生通貨膨脹缺口，應採取緊縮性財政政策
【C】產生產出缺口，應採取擴張性財政政策
【D】產生產出缺口，應採取緊縮性財政政策
9. 美國採行量化寬鬆政策大量購買財政部發行的長期公債，此政策對經濟體的可能影響是？
【A】美國長期公債的利率下跌 【B】美元升值
【C】美國長期公債的價格下跌 【D】以上皆是
10. 以下對於國民所得帳的描述，何者正確？
【A】新成屋售出後計入民間消費支出
【B】購買新車的支出計入固定資本形成
【C】國內生產毛額等於國民所得毛額減去國外要素所得淨額
【D】員工薪水屬於廠商的中間投入
11. A consumer considers that one unit of Coke (x) is a perfect substitute for two units of Pepsi (y). Which utility function can express his preference?
【A】 $U = x + 2y$ 【B】 $U = 2x + y$
【C】 $U = \min\{x, 2y\}$ 【D】 $U = \min\{2x, y\}$
12. Consider a linear demand function $q = 6 - 2p$. The price elasticity of demand at $p = 1$ is
【A】 -2 【B】 -0.5
【C】 -1 【D】 -0.1
13. If the Engel of a good is negatively sloped, this good must be a(n)
【A】 normal good 【B】 inferior good
【C】 Giffen good 【D】 ordinary good
14. A consumer consumes two goods, x and y . When the prices are $(p_x, p_y) = (1, 2)$, her consumption bundle is $(x, y) = (5, 3)$. When the prices are $(p_x, p_y) = (4, 1)$, her consumption bundle is $(x, y) = (a, b)$. Which of the following bundle (a, b) indicates that her choices violate the weak axiom of revealed preference?
【A】 (6, 1) 【B】 (3, 5)
【C】 (2, 2) 【D】 (1, 8)
15. Which utility function is not homothetic?
【A】 $U = xy$ 【B】 $U = x + y$
【C】 $U = \min\{x, y\}$ 【D】 $U = x^{1/2} + y$

(請翻次頁，繼續作答)

國立中正大學 109 學年度碩士班招生考試試題

科目名稱：經濟學

本科目共 5 頁 第 3 頁

系所組別：經濟學系國際經濟學-乙組

16. A competitive firm has the short-run total cost function $TC = q^3 - 8q^2 + 64q + 24$. The firm will produce a positive amount in the short run if and only if the price is greater than

- 【A】 4 【B】 16
【C】 48 【D】 96

17. Consider a production function $f(L, K) = 2L^{2/3}K^{2/3}$. This production function exhibits _____ marginal returns in L and K and _____ returns to scale.

- 【A】 diminishing, decreasing 【B】 increasing, decreasing
【C】 diminishing, increasing 【D】 increasing, increasing

18. Offers like “buy two, get one free” is an example of

- 【A】 first-degree price discrimination
【B】 second-degree price discrimination
【C】 third-degree price discrimination
【D】 dumping

19. Which one is not true for monopolistic competition?

- 【A】 Firms enter or exit the market freely
【B】 Firms produce differentiated product varieties
【C】 Firms are price takers
【D】 Firms make zero profit in the market

20. Consider a game with two players, I and II. Player I can choose among A, B, and C; and player II can choose among X, Y, and Z. The table below shows payoffs of these two players, where the first number in each cell is the payoff of player I and the second number is the payoff of player II. How many pure-strategy Nash equilibria are there in this game?

		II		
		X	Y	Z
I	A	(3,3)	(0,2)	(0,0)
	B	(2,0)	(1,1)	(3,0)
	C	(2,2)	(0,3)	(4,4)

- 【A】 0 【B】 1
【C】 2 【D】 3

(請翻次頁，繼續作答)

國立中正大學 109 學年度碩士班招生考試試題

科目名稱：經濟學

本科目共 5 頁 第 4 頁

系所組別：經濟學系國際經濟學-乙組

第二部分: 填空題(40 分)

(1) 共有 10 個空格，請依照格號順序，將答案填寫於答案卷第一頁選擇題作答區對應格號空格內(第 21~30 格)。每格答對得 4 分，答錯或未作答 0 分

(2) 填空題不需計算過程，僅依答案格內的答案對錯給分。

(3) 若無特別說明，請將答案約分至最簡分數。

1. 美國的大麥克一個是 5.06 美元，台灣的大麥克一個是 69 元新台幣，假設現在匯率是 1 美元兌 30 元新台幣，如果購買力平價成立的話，新台幣匯率被高估或低估多少%？

_____ (21) _____ %。(例如:高估 20%，請填+20。低估 10%，請填-10。沒有高估或低估，請填 0)

2. 在考慮政府的簡單凱因斯模型中，假設台灣原來消費函數 $C=100+0.6Y$ ， $I=280$ 億， $G=150$ 億。

(a) 政府消費支出增加 100 億元時，國民所得會增加多少？_____ (22) _____

(b) 但金融海嘯發生後，2009 年台灣的固定投資下降成 260 億，依據簡單凱因斯模型，如果其他條件不變，請問 2009 年的 GDP 會比上一年下降多少億？

_____ (23) _____。

(c) 為了對抗 2008 年的景氣衰退，政府發放 3600 元的消費券，如果台灣的消費函數；投資與政府支出如題目所述，發放消費券對於國民所得的乘數為_____ (24) _____。

3. 某經濟體的菲力普曲線為 $\pi_t - \pi_{t-1} = 0.08 - 0.5u_t$ ，其中 π_t 為第 t 期的通貨膨脹率， u_t 為第 t 期失業率。請問其自然失業率是_____ (25) _____。

4. A consumer has a utility function $U = \sqrt{m}$, where m is her wealth. Her initial wealth is \$100, and she can buy a lottery for \$50. The lottery pays \$150 with a probability of 40%, and it pays nothing (\$0) with a probability of 60%. If this consumer buys the lottery, her expected wealth is _____ (26) _____, and her expected utility level is _____ (27) _____.

5. Consider a market with an inverse demand function $P = 10 - 2Q^D$ and an inverse supply function $P = 4 + Q^S$. If the government imposes a \$2 sales tax, the market equilibrium quantity would be _____ (28) _____.

(請翻次頁，繼續作答)

國立中正大學 109 學年度碩士班招生考試試題

科目名稱：經濟學

本科目共 5 頁 第 5 頁

系所組別：經濟學系國際經濟學-乙組

6. A monopolist has a total cost function $TC = 10 + 2q + q^2$ and faces an inverse demand function $p = 4 - 2q$. Find the equilibrium price and quantity $(p^*, q^*) = \underline{\hspace{2cm}} (29) \underline{\hspace{2cm}}$.
7. Consider an oligopoly market with two firms, where the inverse demand function is $p = 1 - q_1 - q_2$. The cost function of these firms is $TC = 0.5q_i$, where $i = 1, 2$. Find the Nash-Cournot equilibrium outputs $(q_1^*, q_2^*) = \underline{\hspace{2cm}} (30) \underline{\hspace{2cm}}$.

國立中正大學

109 學年度碩士班招生考試

試題

[第 2 節]

科目名稱	總體經濟學
系所組別	經濟學系國際經濟學-甲組

—作答注意事項—

※作答前請先核對「試題」、「試卷」與「准考證」之系所組別、科目名稱是否相符。

- 1.預備鈴響時即可入場，但至考試開始鈴響前，不得翻閱試題，並不得書寫、畫記、作答。
- 2.考試開始鈴響時，即可開始作答；考試結束鈴響畢，應即停止作答。
- 3.入場後於考試開始 40 分鐘內不得離場。
- 4.全部答題均須在試卷（答案卷）作答區內完成。
- 5.試卷作答限用藍色或黑色筆（含鉛筆）書寫。
6. 試題須隨試卷繳還。

國立中正大學 109 學年度碩士班招生考試試題

科目名稱：總體經濟學

本科目共 5 頁 第 1 頁

系所組別：經濟學系國際經濟學-甲組

注意：本試卷有兩部份，Part I 有 20 題單選題，Part II 有 2 大題填充題。請考生答題前，務必閱讀每一部分的注意事項。

Part I：單選題（每題 3 分，共 60 分）

注意事項：依照題號順序，將答案寫在答案卷第一頁選擇題作答區對應題號空格內（第 1 ~ 20 格）。每格答對得 3 分，答錯或未作答 0 分。

1. 勞動需求曲線是：
(A) 勞動的邊際產量曲線，是負斜率因為邊際報酬遞減法則
(B) 勞動的邊際產量曲線，斜率正負取決於實質工資變動的替代效果和所得效果
(C) 勞動的平均產量曲線，是廠商利潤極大化之下推導出來
(D) 勞動的邊際成本曲線，物價提高，勞動需求曲線右移
2. 關於古典學派商品市場之敘述，下列何者正確？(1) 與可貸資金(loanable funds)市場相同；(2) 決定均衡實質利率；(3) 自發性投資需求增加會增加總合需求；(4) 自發性消費需求減少會減少總合需求；(5) 政府支出增加有完全排擠效果；(6) 政府支出增加實質利率提高
(A) (1) (2) (3) (4)
(B) (1) (2) (5) (6)
(C) (3) (4) (5)
(D) (2) (4) (5) (6)
3. 一經濟體系之菲利浦曲線(Phillips curve)可表示為 $\pi_t = \pi_t^e - 4(u_t - 0.05)$ 。假設人民對通貨膨脹率有適應性預期且調整係數為 1。若第 1 期預期通貨膨脹率等於 0，政府設定失業率目標為 $u_1 = u_2 = 3\%$ ，問第 2 期的實際通貨膨脹率應為多少才能達此目標？
(A) 5%
(B) 8%
(C) 16%
(D) 24%
4. 政府支出的乘數效果，一般而言以簡單凱因斯模型衡量會大於以 IS-LM 模型衡量。理由是：
(A) IS-LM 模型考慮物價變動，簡單凱因斯模型則無
(B) IS-LM 模型考慮開放經濟，簡單凱因斯模型只考慮封閉經濟
(C) IS-LM 模型考慮貨幣市場，政府支出增加利率下跌，排擠民間儲蓄
(D) IS-LM 模型考慮貨幣市場，政府支出增加利率上升，排擠民間投資
5. 在 New Classical 模型中，若實際物價低於原來的預期物價，則
(A) 產出高於潛在產出(potential output)
(B) 就業高於充分就業(full employment)
(C) 實質工資較原來高
(D) (A)和(B)皆正確

國立中正大學 109 學年度碩士班招生考試試題

科目名稱：總體經濟學

本科目共 5 頁 第 2 頁

系所組別：經濟學系國際經濟學-甲組

6. 某國的生產函數為 $Y = A \times K^{0.4} \times N^{0.6}$ ，根據資料發現， Y 的成長率為 5%， K 的成長率為 6%， N 的成長率為 2%，問 A 的成長率應為多少？
- (A) 1.4%
(B) 1.8%
(C) 2.0%
(D) 2.6%
7. 在一個封閉體系的 Solow 成長模型，總生產函數為 $Y = 10K^{\frac{1}{2}}(AN)^{\frac{1}{2}}$ ，人口成長率為 3%、儲蓄率為 30%、技術進步率為 1%，資本折舊率為 1%。定義 $y = Y/AN$, $k = K/AN$ 。以下敘述正確的有：(1) steady state $y^* = 3600$ ；(2) golden rule $k_g = 10000$ ；(3) steady state $k^* = 3600$ ；(4) golden rule 儲蓄率 = 30%；(5) golden rule 儲蓄率 = 50%；(6) golden rule $c = C/AN = 500$
- (A) (1) (2) (4)
(B) (2) (3) (5)
(C) (3) (4) (6)
(D) (2) (3) (5) (6)
8. 對一位借款人(borrower)而言，利率增加則：
- (A) 儲蓄增加
(B) 若利率增加的替代效果大於所得效果，儲蓄增加
(C) 若利率增加的替代效果小於所得效果，儲蓄增加
(D) 儲蓄不變
9. 兩期模型中若下期生產力提高，則下列何者不會發生？
- (A) 投資需求曲線右移
(B) 當期總合需求增加
(C) 當期總合供給增加
(D) 實質利率上升
10. 總體經濟政策的時間不一致(time inconsistency)問題，易發生於：
- (A) 貨幣政策
(B) 固定法則(fixed rule)
(C) 回饋法則(feedback rule)
(D) 權衡政策(discretion)

國立中正大學 109 學年度碩士班招生考試試題

科目名稱：總體經濟學

本科目共 5 頁 第 3 頁

系所組別：經濟學系國際經濟學-甲組

11. 如果美國聯準會決定提高目標通貨膨脹率，請問下列何者正確？
(A) 潛在產出會提高
(B) 潛在產出會減少
(C) 潛在產出不變
(D) 長期總合供給線變成正斜率
12. 假設貨幣流通速度不變，請問下列何者對於長期通貨膨脹率的敘述正確？
(A) 長期通貨膨脹率等於貨幣供給成長率減潛在產出成長率
(B) 長期通貨膨脹率等於潛在產出成長率
(C) 長期通貨膨脹率等於貨幣供給成長率
(D) 長期通貨膨脹率等於零
13. 請問下列何者不屬於Mundell和Fleming所提出的政策三難(Trilemma)？
(A) 資本自由移動
(B) 貨幣政策自主性
(C) 固定匯率
(D) 財政政策自主性
14. 假設一個國家的經濟成長率維持在5%，請問這個國家的所得大約需要多久時間可以加倍？
(A) 20年
(B) 25年
(C) 16年
(D) 14年
15. 如果實質匯率提高2%，本國通貨膨脹率是3%，外國的通貨膨脹率是1%，請問名目匯率的變動率是多少(以本國貨幣為單位)？
(A) 0%
(B) 6%
(C) 2%
(D) 4%
16. 請問下面哪一種形式的生產函數最有可能具備固定規模報酬的特徵？
(A) $Y = \frac{1}{4}(K^{0.25} + L^{0.25} + N^{0.25} + H^{0.25})$
(B) $Y = K^{0.25} L^{0.3} N^{0.25} H^{0.25}$
(C) $Y = 4K + 2L + 3N + 5H$
(D) $Y = (K^{0.25} + L^{0.25} + N^{0.25} + H^{0.25})^2$

國立中正大學 109 學年度碩士班招生考試試題

科目名稱：總體經濟學

本科目共 5 頁 第 4 頁

系所組別：經濟學系國際經濟學-甲組

17. 在固定匯率制度之下，以下對於政府採用緊縮性財政政策對國際收支的影響何者正確？
(A) 貿易餘額縮小但資本帳餘額擴大
(B) 資本帳餘額縮小但貿易餘額擴大
(C) 貿易餘額和資本帳餘額皆擴大
(D) 貿易餘額和資本帳餘額皆縮小
18. 請問下列何者是存款貨幣(deposit money)的定義？
(A) 存款除以通貨的比例
(B) 支票存款加上活期存款後再扣除通貨淨額
(C) 活期存款加上定期存款
(D) 支票存款加上活期存款
19. 景氣不好時，央行宣布降低重貼現率1碼，請問下列何者為非？
(A) 貨幣乘數下降
(B) 貨幣基數提高
(C) 貨幣供給變動不確定
(D) 貨幣政策的效果取決於銀行需求大小
20. 以下對於國民所得帳的敘述何者正確？
(A) 國內生產毛額(GDP)等於國民所得毛額(GNI)減去國外要素所得淨額
(B) 附加價值等於生產總額加上中間投入
(C) 阿明今年購買一部新車的支出在國民所得帳之內屬於投資支出
(D) 若今年通過發放農民年金，則今年的國內生產毛額會提高

Part II：填充題（共 40 分）

注意事項：(1) 依照格號順序，將答案寫在答案卷第一頁選擇題作答區對應格號空格內（第 21～30 格）。每格答對得 4 分，答錯或未作答 0 分。

(2) 答題不要求任何計算過程，只依答案格內的答案對錯給分。

(3) 若無特別說明，請將答案約分至最簡分數。

1. 在 IS-LM 模型中，消費函數 $C = 250 + 0.8Y_d$ ，投資函數 $I = 270 - 360r$ ，政府支出 $G = 200$ ，所得稅函數 $T = 0.2Y$ ， $Y_d = Y - T$ 為可支配所得。實質貨幣需求函數 $L = -1000r + Y$ ，貨幣供給 $M^s = 1000$ 。

(1) 若物價僵固在 $P = 1$ ，問 IS-LM 均衡時， $Y =$ (21) ； $r =$ (22) 。

(2) 承上題，政府想用財政政策將均衡 Y 增加至 $Y = 1800$ ，需增加多少政府支出？ $\Delta G =$ (23) 。

國立中正大學 109 學年度碩士班招生考試試題

科目名稱：總體經濟學

本科目共 5 頁 第 5 頁

系所組別：經濟學系國際經濟學-甲組

- (3) 當物價可變動，且生產函數 $Y = 1000 + 100\sqrt{N}$ ，名目工資僵固在 $W = 10$ 。問當 $AS-AD$ 均衡時， $P =$ (24) ； $N =$ (25) 。
2. 假設一個封閉經濟體的總合需求線為 $Y = 200 + 2G + M - P$ ，其中 Y 代表產出， G 為政府支出， M 為貨幣數量， P 為物價水準。總合供給線則為 $P = -300 + Y + P^e$ ，其中 P^e 代表預期物價水準。貨幣市場均衡條件則為： $M - P = -180 + 0.2Y - 1000R$ ，其中 R 為利率水準。
- (1) 請問充分就業產出水準為多少？(26) 。
- (2) 若預期物價水準 $P^e = 200$ ， $G = 130$ ， $M = 60$ ，此時均衡產出水準是 (27) ，均衡物價水準是 (28) ，均衡利率是 (29) %。
- (3) 承(2)小題，若政府決定採用貨幣政策使均衡產出水準達到充分就業產出水準，此時政府應該如何變動貨幣數量？(30)。(例如：貨幣數量應該提高 20，請填+20。貨幣數量應該下降 10，請填-10，或者不須變動貨幣數量，請填 0。)

國立中正大學

109 學年度碩士班招生考試

試題

[第 3 節]

科目名稱	統計學
系所組別	經濟學系國際經濟學- 甲組 乙組

—作答注意事項—

※作答前請先核對「試題」、「試卷」與「准考證」之系所組別、科目名稱是否相符。

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2. 考試開始鈴響時，即可開始作答；考試結束鈴響畢，應即停止作答。
3. 入場後於考試開始 40 分鐘內不得離場。
4. 全部答題均須在試卷（答案卷）作答區內完成。
5. 試卷作答限用藍色或黑色筆（含鉛筆）書寫。
6. 試題須隨試卷繳還。

國立中正大學 109 學年度碩士班招生考試試題

科目名稱：統計學

本科目共 2 頁 第 1 頁

系所組別：經濟學系國際經濟學-甲組、乙組

Part I：填充題（每格5分，共50分）

注意事項：

- (1) 此部分不須計算過程。
- (2) 請不要使用「選擇題作答區」作答。
- (3) 請自行於作答區第一頁「選擇題作答區」的下面製作如下的填充題作答區：

(a)	(b)	(c)	(d)	(e)
(f)	(g)	(h)	(i)	(j)

1. (30%) Let X and Y be continuous random variables with the joint probability density function $f_{XY}(x, y) = ce^{-x-y}$, $0 \leq x < \infty, 0 \leq y < \infty$, where c is a constant. Then $c =$ (a), $E(XY^2) =$ (b), and $\text{cov}(X, Y) =$ (c). Given the information that $X = x$, the conditional probability density function of Y is $f_{Y|X=x}(y) =$ (d). Now we let $Z = X + Y$ with $f_Z(z)$ the probability density function and $M_Z(t)$ the corresponding moment generating function. Then $f_Z(z) =$ (e) and $M_Z(t) =$ (f).
2. (20%) Let $\{X_1, X_2, \dots, X_n\}$ be a random sample with the common probability density function $f_X(x; \theta) = (2\pi)^{-1/2} e^{-(x-\theta)^2/2}$, $-\infty < x < \infty$, where θ is an unknown parameter. Given the moment condition $E[X - \theta] = 0$, we let $\tilde{\theta}_n$ be the corresponding method of moments estimator for θ . Then $\tilde{\theta}_n =$ (g) and $E(\tilde{\theta}_n) =$ (h). Let CRLB be the Cramér-Rao lower bound for every unbiased estimator of θ . Then CRLB = (i). To test the null hypothesis $H_0: \theta = 1$ versus the alternative hypothesis $H_1: \theta \neq 1$, we may employ the test statistic $T_n = \sqrt{n}(\tilde{\theta}_n - 1)$. Let $f_{T_n, H_0}(z)$ be the probability density function of T_n under H_0 . Then $f_{T_n, H_0}(z) =$ (j).

Part II：計算問答說明題（50 分）

3. (20%) Suppose you estimate the consumption function

$$Y_i = \alpha_1 + \alpha_2 X_i + u_i$$

and the savings function

$$Z_i = \beta_1 + \beta_2 X_i + v_i$$

where Y = consumption, Z = savings X = income. It is known the relationship $X = Y + Z$, i.e., income is equal to consumption plus savings.

- (a) What is the relationship, if any, between α_1 and β_1 ? and also α_2 and β_2 ? Show your calculation. (10%)
- (b) Will the residual sum of squares (RSS) be the same for the two models? Explain. (10%)

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4. (30%) Table 1 summarizes the output of a multiple regression analysis is based on 26 observations.

Table 1: Multiple regression of Y on X_1, X_2, X_3, X_4 and X_5

Predictor	Coefficient	Standard Error
Constant	1.0	1.5
X_1	2.0	3.0
X_2	3.0	0.2
X_3	0.2	0.05
X_4	-2.5	1.0
X_5	3.0	1.5

Table 2: ANOVA

Source	SS	DF	MS	F statistic ¹
Regression	100	B	E	G
Error	A	C	F	
Total	140	D		

Note: 1. Test for the overall significance of the regression

Use the information in Tables 1 and 2 to answer the following questions:

- Complete Table 2, the ANOVA table. In other words, fill in "A" to "G" for the regression analysis. (14%)
- Compute the determination of coefficient R^2 , and interpret it. (8%)
- Compute the value of adjusted- R^2 , and interpret what the difference between R^2 and adjusted- R^2 is. (8%)