

國立中山大學 106 學年度碩士暨碩士專班招生考試試題

科目名稱：經濟學【財管系碩士班】

題號：443001

※本科目依簡章規定「不可以」使用計算機(混合題)

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經濟學[財管系碩士班] 試題共有兩部份，兩部份總計共 100 分。

總體經濟部分，共五十分

選擇題，單選，第 1~16 題每題三分，第 17 題二分

1. The ranking of the recent GDP of European countries in U.S. dollars is A) Germany > United Kingdom > France > Italy B) Germany > France > United Kingdom > Italy C) Germany > France > Italy > United Kingdom D) France > Germany > Italy > United Kingdom
2. Participating countries in the Regional Comprehensive Economic Partnership (RCEP) do not include A) Japan B) Korea C) U.S. D) China E) Malaysia
3. In the past few years oil price falls drastically. Which of the following country is hit the hardest? A) Russia B) Venezuela C) Indonesia D) South Africa E) Japan
4. In the last year after Trump was elected the U.S. president, what did not happen in the U.S.? A) stock prices continued to rise B) 10 year TB interest rate rose C) annual CPI inflation fell D) U.S. dollar appreciated against most major currencies
5. What is the least likely interpretation of a rise in long term interest rate? A) high current inflation B) expectation of higher fiscal deficits C) expectation of higher inflation D) expectation of higher economic growth
6. Inflation can improve the prospect of the debt burden for a government because A) High inflation reduces the nominal value of existing debt. B) High inflation makes issuing new debt cheaper C) High inflation raises the nominal value of tax revenues and GDP without raising the nominal value of existing debt D) High inflation causes foreign currency debt to fall in value in local currency terms
7. Hong Kong pretty much fixes the exchange rate between HK\$ and US\$ and H. K. also allows free capital flow. We can speculate that A) H. K. interest rates follow the U.S.'s B) H. K. interest rates rise with a financial account surplus C) H. K. interest rates rise with its economic growth D) H. K. interest rates rise with its trade balance
8. Which of the following is the most important cause of a hyperinflation? A) increased exports B) households reduce their savings C) government finances expenditures by printing money D) currency depreciation
9. Suppose due to a stock market crash people are saving more. Analyze with a typical IS-LM model. A) IS shifts downward and LM shifts upward B) IS and LM shift upward C) IS shifts downward D) LM shifts upward E) IS shifts upward and LM shifts downward
10. Suppose a country adopts tight monetary policy and expansionary fiscal policy simultaneously and the equilibrium income remains unchanged. Compare the new equilibrium with the old one. Analyze with a typical IS-LM-BP model. A) the quantity of investment rises B) the quantity of trade balance rises C) the currency appreciates D) the quantity of consumption rises E) tax receipts rise
11. Increase in foreign holdings of Taiwanese assets = \$4 billion; Increase in Taiwanese holdings of foreign assets = \$6 billion; Increase in Taiwan's liability to foreign countries = \$1 billion. Based on the information above, what is the balance on Taiwan's financial account? A) financial account deficit = 1 billion B) financial account deficit = 3 billion C) financial account surplus = 1 billion D) financial account surplus = 3 billion
12. If real GDP = 3,000, G = 1,000, X - M = 100, autonomous consumption = 20, planned purchase of capital goods = 200, and planned increase in inventory = 50. Assuming taxes are 1,000 and $mpc = 0.8$, calculate the unplanned change in inventory. A) $-40 < x < -20$ B) $-20 < x < 0$ C) $0 < x < 20$ D) $20 < x < 40$ E) $x > 40$
13. A consumer bought a \$10,000 home-made car and a \$500 France-made lipstick. The government gave \$100,000 to people affected by an earthquake, out of which \$80,000 was spent on food produced locally and \$20,000 was saved. The government also paid \$15,000 as the salary of military personnel and bought a \$1,000 home-made missile and a \$12,000 foreign warplane. What is the country's GDP? A) $x < 90,000$ B) $90,000 < x < 100,000$ C) $100,000 < x < 110,000$ D) $110,000 < x < 120,000$ E) $x > 120,000$

背面有題

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14. If the CPI equaled 1.3 in 2000 and 1.65 in 2010 and a typical household's income equaled \$35,000 in 2000 and \$40,000 in 2010, then between 2000 and 2010, real household income: A) increased B) decreased C) was constant D) cannot be compared
15. GDP and personal income are different. Which of the following does not explain the difference? A) depreciation B) transfer payments C) indirect taxes D) direct taxes
16. In case there is an expected one-time increase in money supply and later the expectation is realized. By the New Classical macroeconomic analysis, which will change from the old equilibrium to the new equilibrium? A) real wage B) nominal wage C) real money supply D) nominal interest rate E) real interest rate
17. Which of the following is a stock rather than flow? A) GDP B) Consumption C) investment D) inventory E) government consumption

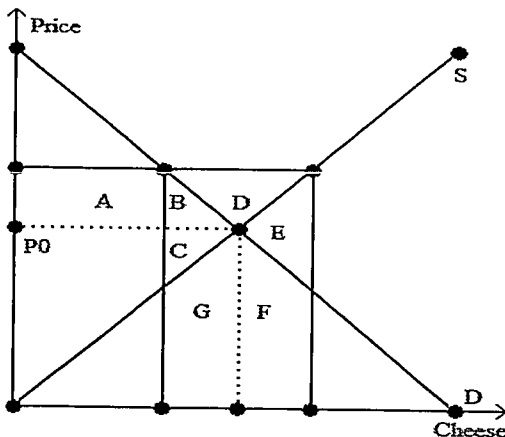
填空题(個體經濟學)，共五十分。每小格答案全對才給分。只需要填入最後的完整答案，”請勿”寫出計算過程。答案卷請自行製作如下：

(1)	(2)	(3)
(4)	(5)	(6)
(7)	(8)	(9)
(10)		

個體經濟學：共 10 格，每一格 5 分，共計 50 分，每小格答案須全對才計分。

1. In a country of Kingsoper there are A and B two regions. Two goods (x and y) are produced in both regions. Production functions for region A are given by $x_A = \sqrt{l_x}$; $x_A = \sqrt{l_y}$; where l_x and l_y are the quantity of labor devoted to x and y production, respectively. Total labor available in the region A is 100 units (i.e., $l_x + l_y = 100$). For region B are given by $x_B = \frac{1}{2}\sqrt{l_x}$; $x_B = \frac{1}{2}\sqrt{l_y}$; There are also 100 units of labor available in the region B. What are the production possibility curves for regions A and B?
 (1) _____.

2. Suppose the government implements the “Price Supports” policy to protect cheese farmer and raises the price of cheese above the market equilibrium level (P_0) by imposing a high minimum price and purchasing all of the excess supply from the market, and these quantities are destroyed. Based on the areas in the figure below:



a). Compare to no government “Price Supports” policy implemented; what is the change (loss or gain) area in consumer surplus after this policy is adopted? (2) _____.

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- b). Compare to no government "Price Supports" policy implemented; what is the change (loss or gain) area in producer surplus after this policy is adopted? ____ (3) ____.
3. Consider that the government imposed per unit taxes (t) on the output of 1 and 2 two firms in the Cournot equilibrium ($t_1 \neq t_2$): The market demand for the output of two firms is: $p=b-Q$ (with $b>0$) and each firm has the cost function $C_i(q_i) = cq_i$ (with $c>0$); q_i is firm output, for $i=1, 2$ firm. The total tax revenue collected by the government is $REV(t_1, t_2) = (t_1 * q_1^*) + (t_2 * q_2^*)$
- a). Find the q_1^* and q_2^* ? ____ (4) ____.
- b). What is the tax revenue maximizing tax rates for t_1 and t_2 ? ____ (5) ____.
4. The short term production function of a perfectly competitive firm is given by: $y = f(L) = 4L^{1/2}$, and its profit is given as $\pi = py - wL - vK$, where p is price, w is wage rate, L is labor input, v is interest rate, and K is capital with a fixed input.
- a). Solve for the firm's profit-maximizing demand for L and find the supply function.
(L^* , supply function)= ____ (6) ____
- b). Find the firm's average total cost function (ATC). ____ (7) ____
5. Universal Fur is located in Clyde, Baffin Island, and sells high-quality fur bow ties throughout the world at a price of \$ 5 each. The production function for fur bow ties (q) is given by: $q = 240x - 2x^2$; where x is the quantity of pelts used each week. Pelts are supplied only by Dave Trading Post Company, which obtains them by hiring Eskimo works at a rate of \$ 10 per day. Dave's Company weekly production function for pelts is given by: $x = \sqrt{l}$, where l is the number of days of Eskimo works time used each week.
- a). For the quasi-competitive case in which both Universal Fur and Dave Trading Post Company act as price takers for pelts, what will be the equilibrium price (p_x) for pelts and how many pelts (x) will be produced? (p_x, x)=? ____ (8) ____
- b). Suppose Dave's company acts as a monopolist, while Universal Fur is still be a price taker, what equilibrium will emerge in pelt market? (p_x, x)=? ____ (9) ____
- c). Suppose Universal Fur acts as a monopolist, while Dave's company is as a price taker, what will equilibrium be? (p_x, x)=? ____ (10) ____

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題號：443002

※本科目依簡章規定「不可以」使用計算機(問答申論題)

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※本科試題共 20 小格，每小格 5 分，共計 100 分。

1. 每一空格答案須全對才給分。
2. 只需填入最後答案，不需寫出計算過程。
3. 選擇題為單選題。
4. 無法整除者，請用分數作答。

答案卷請製作如下：所有答案必須作答到答案本，不可在本試題卷上作答。

(1)	(2)	(3)
(4)	(5)	(6)
(7)	(8)	(9)
(10)	(11)	(12)
(13)	(14)	(15)
(16)	(17)	(18)
(19)	(20)	

1. If Y is distributed $N(2,4)$, find $P(1 \leq Y \leq 4)$. (1)

- A) $\Phi(4) - \Phi(1)$
- B) $\Phi(1) - \Phi(-0.5)$
- C) $\Phi(2) - \Phi(-1)$
- D) $1 - \Phi(1)$

2. With i.i.d. sampling each of the following is true except (2)

- A) $E(\bar{Y}) = \mu_Y$.
- B) $\text{var}(\bar{Y}) = \sigma_Y^2/n$.
- C) $E(\bar{Y}) < E(Y)$.
- D) \bar{Y} is a random variable.

3. If a fair 6-sided die is rolled, the expected value of the number rolled is (3)

- A) 3
- B) 3.5
- C) 4
- D) 1/6

4. To standardize a variable you (4)

- A) subtract its mean and divide by its standard deviation.
- B) integrate the area below two points under the normal distribution.
- C) add and subtract 1.96 times the standard deviation to the variable.
- D) divide it by its standard deviation, as long as its mean is 1.

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5. 利用最小平方法求得下列 X 和 Y 的迴歸式: $\hat{Y}_i = -5 + 10X_i$,

X_i 與殘差值 e_i 的關係如下

X_i	0	5	10	15	20
e_i	0	-5	5	4	?

(1) 請求算第 5 個殘差值? (5)

(2) 第 5 個 Y_i 的實際觀察值為何? (6)

6. 兩個變數 A 與 B 皆服從標準常態分配，而且 $\text{Cov}(A, B) = 0.5$ ，則由 $(2A + 5B)$ 所構成的組合變異數為多少? (7)

7. 若甲地區股票報酬率 X 的機率函數如下

$$f(x; \theta) = \theta e^{-\theta x}, 0 < x < \infty, \theta > 0$$

請問甲地區股票報酬率呈現右偏或左偏的現象? (8) (請填右偏或左偏)

8. 每位小孩為男生或女生的機會相等，觀察有 3 個小孩家庭的實驗，請問：

(1) 恰有二個女孩的機率? (9)

(2) 老大為女孩的情況下，至少有二個女孩的機率? (10)

9. 若 X 服從常態分配其平均數為 0 和變異數為 5，求

(1) $E(X^2)$ (11)

(2) $V(X^2)$ (12)

10. Let $Y_1 \leq Y_2 \leq Y_3$ be the order statistics of a random sample of size $n=3$ from the exponential distribution with pdf $f(x) = e^{-x}, 0 < x < \infty$

(1) Compute the probability that Y_3 is less than two? (13)

(2) Determine $P(Y_1 > 1)$ (14)

11. 某公司生產細繩，由經驗知道每一尺長的不良品數 X ，服從 $\lambda = 2$ 之 Poisson 分配。若出售每一尺細繩的利潤為 $Y = 50 - 2X - X^2$ ，試求售出一尺長細繩之期望利潤為? (15)

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12. The following table shows the expected returns from investing in assets A and B under two possible scenarios (S=1 and S=2), as well as the probabilities of each scenario occurring.

	S=1 (Prob=1/3)	S=2 (Prob=2/3)
Asset A	18%	-3%
Asset B	30%	0%

- (1) Compute the expected return of a portfolio with 50% invested in each asset. The risk-free rate of return is equal to 2%. (16)
- (2) Compute the expected return of a portfolio with 30% invested in asset A, 40% invested in asset B and the remainder invested in the risk-free asset. (17)

13. 若一投資人持有二種股票：A 股票的預期報酬率為 15%，B 股票的預期報酬率為 20%，標準差分別為 15% 和 21%，但二股票的相關係數為 +1，若 A、B 二種股票的投資金額分別為 10 萬與 20 萬元，則其投資組合報酬率的標準差為何？ (18)

14. 迴歸資料如下：

$$\sum_{i=1}^{20} Y_i^2 = 1500 \quad \sum_{i=1}^{20} Y_i = 100 \quad n = 20$$

$$SSE(X_1, X_2) = 200 \quad SSE(X_1) = 400$$

其中 SSE 為線性迴歸方程式的未解釋變異。

求複判定係數(Multiple Coefficient of Determination) R_{Y12}^2 (19)

15. 設有一迴歸模型 $\hat{Y} = a + bX$ ，已知 b 的 t 檢定統計量為 5，且 $n=10$ ， $\sum (Y - \hat{Y})^2 = 48$ ，請計算 R^2 (20)

