

# 國立中山大學九十一學年度碩士班招生考試試題

科目：經濟政策（經濟所乙組）

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說明：1.本考試共五大題，每題 20 分。

2.回答時，要註明題目號碼，不必按照題目次序回答；不必抄題目。

- (1) 台灣與大陸在 2002 年一月同時加入世界貿易組織。回答下列二個問題。
  - (1.1) 分別討論對我國農業、工業與服務業的衝擊。
  - (1.2) 我國因應措施。
  
- (2) 新台幣曾貶值高達 1 美元折換新台幣 35 元左右。回答下列二個問題：
  - (2.1) 分別說明新台幣貶值對我國經濟的利與弊處。
  - (2.2) 如果我國中央銀行要干預以穩定新台幣，說明有哪些措施。
  
- (3) 台灣 20 多年來高科技產業(尤其是電子工業)在國際市場有很大成就。除了民間企業精神以外，政府也扮演重要角色。說明：
  - (3.1) 政府的策略與措施。
  - (3.2) 獎勵辦法。
  
- (4) 政府的財政赤字是促進經濟成長的一種工具。不過，“過度”的財政赤字則對經濟成長有反效果。分別說明此二句話的意義。
  
- (5) 簡答題
  - (5.1) 政策(policy)與策略(strategy)的異同。
  - (5.2) 政府的政策與自由競爭市場的互補性。

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1. Suppose that the government wants to control the use of the commons, what methods exist for achieving the efficient level of use? (10%)
2. Under which circumstances would network externalities arise? Describe how the demand for a mobile phone might exhibit network externalities? (10%)
3. (a.) Is it possible to have a Pareto efficient allocation where everyone is worse off than they are at an allocation that is not Pareto efficient? (b.) Describe the implications of the First and the Second Theorem of Welfare Economics. (10%)
4. Consider a firm with the Cobb-Douglas production function given by  $f(x_1, x_2) = x_1^a x_2^b$ . (a.) Give the supply function of the Cobb-Douglas firm. (b.) Show that when the firm exhibits CRTS, the supply function is not well defined as long as the output and input markets are both competitive. (10%)
5. Consider the following two assumptions: the assumption of diminishing marginal utility and the assumption of diminishing marginal rate of substitution. Show that the first assumption is not reasonable if the utility function possesses the property of positive monotonic transformation. (10%)

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科目：經濟學原理(經濟所乙組)

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6. 問答題 (20%) :

- a. 支持古典學派(classical school)、凱因斯學派(Keynesian school)與新興古典學派(new classical school)總體經濟理論的總合供給曲線之形狀分別為何？
- b. 請說明三個學派的支持者是各自在甚麼基礎上立論而宣稱所運用的總合供給曲線之形狀比較合乎現實。
- c. 再者，如果不限制學派立場來描述當前經濟情況，總合供給函數應該是甚麼形式較能令您滿意？為什麼？

7. 問答題 (15%)

- a. 經濟人的投資行為可能受哪些因素影響較大、如何影響？
- b. 請將上述的說明表現為投資函數的形式，並繪圖說明各變數如何影響投資活動。
- c. 有哪些經濟理論支持您上述的貨幣需求函數？

8. 解釋名詞：(15%)

- a. efficiency wage
- b. Solow residual
- c. endogenous growth

每題二十分，共五題，請橫寫由左到右依序作答，計一百分。

(一) Let  $X$  and  $Y$  be two independent random variables with probability density functions

$$f_X(x) = \frac{e^{-r} r^x}{x!} \quad x = 0, 1, 2, \dots$$

and

$$f_Y(y) = \frac{e^{-s} s^y}{y!} \quad y = 0, 1, 2, \dots$$

Let  $Z = X + Y$ . Find  $f_Z(z)$ .

(二) Let  $X$  be uniformly distributed on the interval  $(a, b)$ . Calculate the variance of  $X$ ,  $\text{var}(X)$ .

(三) Let  $\mathbf{X} = (X_1, X_2, X_3)'$  have a trivariate normal distribution with means 6, 4, and 2 and variances 16, 25, and 64, and with  $\text{cov}(X_1, X_2) = 6$  and  $\text{cov}(X_1, X_3) = \text{cov}(X_2, X_3) = 0$ . Let  $Y_1 = 2X_1 + 3X_2 + X_3 + 2$  and  $Y_2 = 4X_1 + X_3 + 2$ . What is the joint distribution of  $\mathbf{Y} = (Y_1, Y_2)'$ ?

(四) Given a random sample of size  $T$ ,  $(Y_1, Y_2, \dots, Y_T)$  from Normal distribution  $N(\mu, \sigma^2)$ . Find the Cramer-Rao Lower Variance Bound for the unbiased estimator of  $\mu$ .

(五) Let  $Y_1, Y_2, \dots, Y_n \sim N(\mu, \sigma^2)$ . Find the  $100(1-\alpha)\%$  confidence interval for  $\mu$ .

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科目：個體經濟學(經濟所甲組)

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1. 選擇題 (30%)

- (1) The principal-agent problem of ownership vs. control of the corporation tends to get worse when
- stock in a corporation is held exclusively by a small number of people who control the company's day-to-day operations.
  - stock in the company is tightly held, but there are some "outsider" stockholders.
  - stock in the company is very diffusely held, with no individual or group having control over a large block of stock.
  - managers have profit-sharing schemes as part of their incentive package.
  - managers focus on maximizing the firm's profits, rather than the firm's market share.
- (2) Some universities consider to offer "tuition bonds." Parents can purchase a bond at the time their child is born. The bond is redeemable in 18 years for an amount of money equal to the cost of the university's tuition at that time. Which of the following would reduce the market price of these bonds?
- An increase in the rate of interest.
  - A decrease in the rate of interest.
  - The passage of legislation limiting increases in college tuition or the rate of inflation.
  - both (a) and (c).
  - both (b) and (c).
- (3) Use the following statement to answer this question:
- If mixed strategies are allowed, every game has at least one Nash equilibrium.
  - The maximin strategy is optimal in the game of "matching pennies."
- both I and II are true.
  - I is true and II is false.
  - I is false and II is true.
  - both I and II are false.
- (4) A country's government would like to raise the price of one of its most important agricultural crops, coffee beans. Which of the following government programs will result in higher prices for coffee beans?
- An import quota on coffee beans.
  - An acreage limitation program which provides coffee bean farmers financial incentives to leave some of their acreage idle.
  - An import tariff on coffee beans.
  - All of the above.

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科目：國際經濟學 (經濟所甲組)

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- (5) Club Med, which runs a number of vacation resorts, offers vacation packages at a lower price in the winter, the "off season" than in the summer. This practice is an example of:
- a) peak-load pricing.
  - b) intertemporal price discrimination.
  - c) two-part tariff.
  - d) bundling.
  - e) both (a) and (b) are correct.

- (6) Use the following statements to answer this question.

- I. To maximize profit, a firm will advertise more when the advertising elasticity is larger.
- II. To maximize profit, a firm will advertise more when the price elasticity of demand is smaller.

- a) both I and II are true.
- b) I is true and II is false.
- c) I is false and II is true.
- d) both I and II are false.

2. Answer the following statements as true, false, or uncertain. Defend your answer briefly, but clearly. Undefined answers are not acceptable. (20%)

(a) The distributional consequences of the delineation of property rights are eliminated when preferences are quasilinear. This can also be explained by the Coase Theorem.

(b) Consider a sealed bid auction among  $n$  people for some good. Let  $v_i$  be the value of the good to person  $i$ . If the good is sold to the highest bidder at the *second* highest price bid, it will be in each player's interest to tell the truth.

(20%)

3. Consider the profit-maximizing firm with two inputs. This model can be treated as the constrained maximum problem

maximize  $\pi = py - w_1x_1 - w_2x_2$

subject to  $y = x_1^\alpha x_2^{(1-\alpha)}$ ,  $\alpha = 0.3$

- a) Using the Lagrangian to show the profit maximization, and obtain the Marshallian demand function.
- b) Show that profit-maximization implies cost-minimization at the profit-maximizing level of output.
- c) Derive the comparative statics of this model treating  $y, x_1, x_2$  as independent variables subject to a constraint.

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(15%)

4. Consider two identical firms (no. 1 and no. 2) that face a linear market demand curve. Each firm has a marginal cost of zero and the two firms together face demand:

$$P = 50 - 0.5Q, \text{ where } Q = Q_1 + Q_2$$

- Find the Cournot equilibrium  $Q$  and  $P$  for each firm.
- Find the equilibrium  $Q$  and  $P$  for each firm assuming that the firms collude and share the profit equally.
- Contrast the efficiencies of the markets in (a) and (b) above.

(15%)

5. A family with two adult members seeks to maximize a utility function of the form

$$U(C, H_1, H_2),$$

where  $C$  is family consumption and  $H_1$  and  $H_2$  are hours of leisure of each family member. Choices are constrained by

$$C = w_1(24 - H_1) + w_2(24 - H_2) + N,$$

where  $w_1$  and  $w_2$  are the wages of each family member and  $N$  is the nonlabor income.

- Use the notions of substitution and income effects to discuss the signs of the cross-substitution effects  $\partial H_1 / \partial w_2$  and  $\partial H_2 / \partial w_1$ .
- Suppose that one family member (say, individual 1) can work in the home, thereby converting leisure hours into consumption according to the function,

$$C_1 = f(H_1),$$

where  $f' > 0, f'' < 0$ . How might this additional option affect the optimal division of work among family members.

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科目：總體經濟學 (經濟所甲組)

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底下係多重選擇題；你選擇的答案，必須提供簡單的經濟邏輯說明，否則不予計分；配分每題十分，答錯倒扣一分。

1. 民眾自主性的增加儲蓄，將導致 (a) 所得減少 (b) 儲蓄減少 (c) 投資水準不變 (d) 資本累積 (e) 經濟成長。
2. 政府支出的平衡預算乘數 (a) 將會小於一 (b) 會等於一 (c) 可能為負 (d) 等於邊際稅率的倒數 (e) 可能會大於一。
3. 下列敘述何者為真
  - (a) 凱因斯學派的 IS-LM 模型係模型設定不一致 (inconsistency)
  - (b) IS-LM 模型的貨幣政策係貨幣當局實施公開市場操作的結果
  - (c) IS-LM 模型的政府支出增加係隱含以貨幣融通的結果
  - (d) IS-LM 模型的政府支出增加係隱含以債券來融通
  - (e) IS-LM 模型實際上涵蓋三個市場而非兩個市場。
4. 政府當局實施減稅的德政，將會導致 (a) 勞動就業量增加 (b) 政府稅收減少 (c) 國民所得減少 (d) 政府稅收增加 (e) 物價下跌。
5. 民眾不誠實報稅比例上升 (亦即租稅逃避增加)，將導致 (a) 國民所得增加 (b) 政府稅收減少 (c) 國民所得減少 (d) 政府稅收增加 (e) 物價下跌。
6. 下列敘述何者為偽
  - (a) 適應性預期為一外生性預期 (b) 理性預期為一外生性預期 (c) 如果民眾的預期形成係理性預期，則預期值是模型決定的結果
  - (d) 適應性預期的預期值是模型決定的結果 (e) 理性預期為一內生性預期。
7. 勞動供給的決策係決定於 (a) 名目工資率 (b) 實質利率 (c) 所得稅稅率 (d) 未來物價的預期 (e) 本期與下期跨期相對實質工資。



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科目：總體經濟學 (經濟所甲組)

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8. 下列敘述何者為真
- (a) 古典學派強調無為而治
  - (b) 凱因斯學派強調需求管理政策
  - (c) 唯貨幣論者強調法則而非權衡
  - (d) 理性預期學派強調政策無效論
  - (e) 新興凱因斯學派強調市場不完全性 (market friction) 而政策有效。
9. 如果資本於國際間不完全移動，民眾的預期形成是靜態預期，且貨幣當局的目標係追求所得水準的穩定，則
- (a) 於經濟體系面臨商品市場的隨機干擾時，資本移動性大的情況下，貨幣當局應該採行完全沖銷的固定匯率制度而非浮動匯率制度
  - (b) 於經濟體系面臨商品市場的隨機干擾時，資本移動性小的情況下，貨幣當局應該採行完全不沖銷的固定匯率制度
  - (c) 於經濟體系面臨貨幣市場的隨機干擾時，不管資本移動程度為何，貨幣當局應採行浮動匯率制度
  - (d) 於經濟體系面臨商品市場的隨機干擾時，資本移動性大的情況下，貨幣當局應採行浮動匯率制度
  - (e) 於經濟體系面臨貨幣市場的隨機干擾時，不管資本移動程度為何，貨幣當局應採行完全不沖銷的固定匯率制度而非完全沖銷的固定匯率制度。
10. 貨幣政策在何種情況下完全無效?
- (a) 貨幣需求的利率彈性為零
  - (b) 投資需求的利率彈性為零
  - (c) 完全不沖銷的固定匯率制度
  - (d) 貨幣需求的利率彈性無窮大
  - (e) 固定匯率且資本完全移動。