

國立中央大學 109 學年度碩士班考試入學試題

所別： 企業管理學系 碩士班 一般甲組(一般生)
企業管理學系 碩士班 一般乙組(一般生)

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科目： 經濟學

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*請在答案卷(卡)內作答

一、簡答題(共 24 分，每題 6 分)：請針對各題選出選項並請說明理由。每題至少有一個選項為正確答案，答案全對始予計分，答錯不倒扣。若無計算式或說明理由，該題將不予計分。

1. James deposits \$1,000 that was in his wallet into a checking account at the bank.

What the following statements is (are) **not** correct?

- (1) The deposit initially increases the money supply by \$1,000 because checkable deposits have increased by \$1,000.
- (2) If the central bank requires banks to maintain a reserve ratio of 20%, the bank will hold \$200 as reserves against the new deposit and make additional loans equal to \$800.
- (3) If every time the bank makes a loan, the loan results in a new checkable bank deposit in a different bank equal to the amount of the loan. When James deposits \$1,000, the money supply can expand by \$5,000.
- (4) Suppose the bank also keeps an excess reserve ratio of 20%. When James deposits \$1,000, the money supply can expand by \$2,500.
- (5) A \$1,000 balance in James' checking account is not part of M1, but it is part of M2.

2. What the following statements is (are) correct?

- (1) If the central bank wants to increase the money supply, it could buy government bonds.
- (2) If real wages increase, the demand for money will decrease in the Baumol-Tobin model.
- (3) In the sticky-wage model, the imperfection is that contracts and arrangements may prevent nominal wages from adjusting rapidly to changing economic conditions.
- (4) The short-run aggregate supply curve is drawn for a given price level.
- (5) The opportunity cost of holding money is the real interest rate.

3. What the following statements is (are) **not** correct?

- (1) If there are only two goods, an decrease in the price of good 1 will decrease the demand for good 2 only if the two goods are perfect substitutes.

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(2) The inverse demand function for cars is $P=65-6Q$. The inverse supply is $P=15+4Q$. In the past, cars were not taxed, but now a tax of 20 dollars per car has been introduced. The equilibrium quantity of cars drops by 3 cars.

(3) If the income elasticity of demand for a good is greater than 1, it is a luxury good.

(4) Suppose that a monopolist faces the demand function of is $P=70-2Q$, and has a cost function $C=1.5Q^2$. In the equilibrium, the maximal profit of this monopolist is 350.

(5) The deadweight loss from previous monopolist is 40.

4. What the following statements is (are) correct?

(1) There are only two goods in the economy. If all prices of goods are unchanged and income doubles, then the budget line will become flatter.

(2) Good X is measured on the horizontal axis and good Y on the vertical. If the preferences of someone whose indifference curves are parallel to the X axis, this person doesn't care how much Y he has.

(3) Mary unexpectedly wins ten thousand dollars at gambling. She buys fewer fruits than she used to. Fruits are a Giffen good for Mary.

(4) There are two firms in the economy. The market demand curve is given by $P=2,500-Q$. Each firm has a cost function $C=2q_i^2$, where q_i is the output of each firm. The two firms form a cartel to maximize joint profits. They will reach maximal profits if and only if each firm produces of 312.5 units under this cartel arrangement.

(5) In Nash equilibrium, each player is making an optimal choice for herself, given the choices of the other players.

二、是非題(共 10 分，每題 5 分)：請針對以下各題回答「對」或「錯」，並說明理由，若無解釋該題將不予計分。

1. In a competitive market, the economy states in long-run equilibrium initially. Now suppose that demand permanently decreases. Although each firm is maximizing profit, it is incurring an economic loss in short-run equilibrium. Some firms decide to exit the market because of the economic loss. Therefore, market output decreases but the

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output of the firms that remain in the market increases. The firms that remain in the market could earn an economic profit in the new long-run equilibrium.

2. The price elasticity of demand is a units-free measure of the responsiveness of the quantity demanded of a good to a change in its price when all other influences on buying plans remain the same. The division of the tax between buyers and sellers depends in part on the elasticity of demand. If demand is perfectly inelastic, sellers pay the entire tax.

三、計算與問答題(共 66 分)：若無計算式或說明理由，該題將不予計分。

1. There are two firms, A and B, in an economy. Firm A produces Good X with a cost function $C_A=ax^2$. Firm B produces Good Y, and it is affected by Firm A who produces pollution. Therefore, its cost function is $C_B=by^2+dxy$, where a , b , and d are constants. The prices of Good X and Y are $\$P_x$ and $\$P_y$, respectively.

(1) If two firms can't negotiate, how much should each firm produce to maximize profits? (4 分)

(2) If two firms can negotiate to maximize their joint profits, how much should each firm produce? (4 分)

(3) Suppose that the government imposes a tax on Firm A to eliminate externalities. If Firm A produces x units of output, then it has to pay a tax tx . What would be the tax rate, t , for Firm A? (4 分)

2. The New York Times:

When the week ended without the war many feared, Mr. Trump boasted that he had taken out an American enemy. But the struggle between two nations is not really over. Iran may find other ways to take revenge. Iraqi leaders may expel American forces, accomplishing in death what General Suleimani tried and failed to do in life. And in the confusion, a Ukrainian civilian passenger jet was destroyed by an Iranian missile, killing 176 people.

Trump pushes US and Iran to the brink of war. According to one United States official, the new intelligence indicates that Iran has a 50% chance to launch missiles at Iraq

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airbases taking revenge on US. US government considers establishing the early warning system to intercept the attacking missiles. The new system will cost \$100. Suppose the early warning system can perfectly intercept missiles. There are two different conditions that the US both gets a profit of \$800: (a) Iran doesn't launch missiles; (b) Iran launches missiles but being intercepted by the early warning system. If the US doesn't establish the system and Iran launches missiles, the US gets a profit of \$300.

- (1) Should US government establish the early warning system? (4 分)
- (2) If there is an insider in Iran, he can get information whether Iran launches missiles or not in advance. How much does US government willing to pay to get the information? (4 分)

3. XYZ Company is a monopolist. It is selling its product in foreign (F) and home (H) markets. The demand function of foreign market is $P_F=3-0.5Q_F$. The demand function is given by $P_H=2-0.5Q_H$ in the home market. The company has a cost function

$$C=\frac{7}{3}+(Q_F+Q_H).$$

- (1) What is price discrimination? (5 分)
- (2) What are the prices and quantities in two markets, when the company maximizes its profits? (4 分)
- (3) If the company can't charge different prices in two markets, how do its quantities and profits change? (4 分)

4. Lucas island is a small open economy with fixed exchange rate. Use the Mundell-Fleming model to answer the following questions. Be sure to include an appropriate graph or equations in your answer.

- (1) If Lucas island suffers from a recession, should the government use monetary or fiscal policy to stimulate employment? (3 分)
- (2) If Lucas island restricted the import of cell phones from other islands, what would happen to income, the exchange rate, and the trade balance in Lucas island? Consider both the short-run and the long-run impacts. (6 分)

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5. The central bank is considering two alternative monetary policies: (a) holding the money supply constant and letting the interest rate adjust, or (b) adjusting the money supply to hold the interest rate constant.

If the goal of central bank is to stabilize output, which policy will show a better effect under the following conditions in the IS-LM model?

(1) All exogenous shocks affecting the economy come from changes in the goods market. (4 分)

(2) All exogenous shocks affecting the economy come from changes in the money market. (4 分)

6. Given the following information about the closed economy:

$$Y = C + I + G,$$

$$C = C(Y-T), I = I(r).$$

This economy produces full-employment output and government purchases and taxes are the exogenous variables set by fiscal policymaker.

(1) An increase in the demand for investment goods results from technological innovation. What happens to the equilibrium amount of investment and saving? (3 分)

(2) If consumption also depends on the interest rate, a higher interest rate would reduce consumption. What happens to the equilibrium amount of investment and saving? (4 分)

Please illustrate the two equations of investment and saving on a graph.

7. Suppose that four-month interest rates (annualized) in Taiwan and the United States are 5 percent and 2 percent, respectively. If the spot rate is 1 USD=30 TWD and the 120-day forward rate is 1 USD=30.2 TWD,

(1) What is covered interest rate parity? (3 分)

(2) Which country would you invest? What arbitrage opportunity do these figures present? (4 分)

(3) Assuming no transaction costs, what would be your arbitrage profit per U.S. dollar or dollar-equivalent borrowed? (2 分)

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