

考試科目	經濟學	所別	商學院相關系所	考試時間	2月 27日(日) 第 1 節
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選擇題請在答案卡上作答，否則不予計分。

Multiple Choice (1.7 points each)

Identify the letter of the choice that best completes the statement or answers the question.

Mark each answer clearly with a No. 2 pencil on the Scantron form.

- When a firm is operating at efficient scale, average total cost will
 - fall as output is increased.
 - fall as output is decreased.
 - be at its maximum.
 - none of the above.
- If marginal cost exceeds marginal revenue, then
 - the firm must be experiencing losses.
 - the firm may still be earning a profit.
 - the firm is most likely to be at a profit maximizing level of output.
 - a profit maximizing firm should increase the level of production.
- When a competitive market that is comprised of firms that have identical cost structures experiences a sudden yet persistent increase in demand, which of the following are most likely to happen?
 - New firms will enter the market.
 - In the long-run all firms will be producing at their efficient scale.
 - The price will return to the level before the changes in demand in the long-run.
 - (i) and (ii) only
 - (i) and (iii) only
 - (ii) and (iii) only
 - (i), (ii) and (iii)
- Excessive monopoly profits themselves represent
 - a deadweight loss.
 - a shrinkage in total surplus.
 - a shrinkage in consumer surplus.
 - all of the above.
- Since natural monopolies have a declining average cost curve, regulating a natural monopoly by setting price equal to marginal cost would

考 試 科 目	經濟學	所 別	商學院相關系所	考 試 時 間	2 月 27 日(日) 第 1 節
---------	-----	-----	---------	---------	-------------------

(a) cause the monopolist to operate at a loss.
 (b) maximize producer surplus.
 (c) result in a less than optimal total surplus.
 (d) achieve the optimal output level as in the competitive market in the long-run.

6. Consider the Chamberlin's monopolistic competition model. In the short-run equilibrium, the price of a firm must
 (a) equal to the marginal cost
 (b) equal to the marginal cost times the markup and be smaller than the average cost.
 (c) equal to the marginal cost times the markup and be greater or equal to the average cost.
 (d) be smaller than the marginal cost.

7. Suppose there are only two firms supplying in the market and they produce a homogeneous good. Two firms produce the good with the same constant marginal cost. There is no other cost of production. Firms compete by setting price simultaneously. Consumers maximize their utilities. The equilibrium price of both firms must
 (a) equal to the marginal cost times the markup.
 (b) equal to the marginal cost
 (c) be greater than the marginal cost but smaller than the marginal cost times the markup.
 (d) equal to the average cost.

8. Everything is the same as previous question, but one firm (firm A) has higher marginal cost than the other (firm B.) The equilibrium price must
 (a) equal to the marginal cost of firm A
 (b) equal to the marginal cost of firm B
 (c) be slightly below the marginal cost of firm A or equal to the optimal price of firm B as it has the monopoly power.
 (d) equal to the average cost of firm A.

9. Suppose in a country, there is a sector where producers produce a homogeneous good with an increasing constant marginal cost. There is a negative externality when producing the good. Suppose the country is a small open economy, which means it can import the good with a constant price. Suppose also that it does not have comparative advantage in producing the good and there is no complete specialization under free trade. In the following choices, what is the best policy to resolve the problem of externality?
 (a) Using an import subsidy.
 (b) Using a production subsidy.
 (c) Using a tariff.
 (d) Using a production tax.

備	註	試	題	隨	卷	繳	交
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考試科目	經濟學	所別	商學院相關系所	考試時間	2月27日(日)第1節
------	-----	----	---------	------	-------------

10. In a Ricardian trade model with two countries and two goods, suppose one country has absolute advantage in producing both goods. Goods are traded freely. The country with lower productivity must produce at least one good because

- both countries enjoy gains from trade.
- otherwise, the factor market cannot be clear.
- two countries complete specialize in a sector at equilibrium.
- both goods are demanded.

11. A simple linear demand function may be stated as $Q = a - bP + cI$ where Q is quantity demanded, P is the product price, and I is consumer income. To compute an appropriate value for c , we can use observed values for Q and I and then set the estimated income elasticity of demand equal to:

- $c(I/Q)$
- $c(Q/I)$
- $-b(I/Q)$
- $Q/(cI)$

12. Use the following two statements to answer this question:

I. If utility is ordinal, a market basket that provides 30 utils provides twice the satisfaction of a market basket that provides 15 utils.

II. When economists first studied utility it was believed that utility was cardinal, but it was later discovered that ordinal preferences are sufficient to explain how most individual decisions are made.

- 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.

13. Which of the following demand functions represents a price elasticity of demand equal to -0.33 and an income elasticity of demand equal to 0.8 at all points along the curve?

- $Q = 3 - 0.33P + 0.8I$
- $Q = 4.5 - 0.33\log(P) + 0.8I$
- $\log(Q) = 1.34 - 0.33\log(P) + 0.8I$
- $\log(Q) = 2.34 - 0.33 \log(P) + 0.8 \log(I)$

14. Bob views apples and oranges as perfect substitutes in his consumption, and $MRS = 1$ for all combinations of the two goods in his indifference map. Suppose the price of apples is \$2 per pound, the price of oranges is \$3 per pound, and Bob's budget is \$30 per week. What is Bob's utility maximizing choice between these two

請注意：背面還有試題。

考試科目	經濟學	所別	商學院相關系所	考試時間	2月 27日(日) 第 1 節
------	-----	----	---------	------	-----------------

goods?

- (a) 4 pounds of apples and 6 pounds of oranges
- (b) 5 pounds of apples and 5 pounds of oranges
- (c) 10 pounds of oranges and no apples
- (d) 15 pounds of apples and no oranges

15. Assume that we have a demand curve of the form:

$$\log(Q) = a - b \log(P) + c \log(I),$$

where Q = quantity, P = price, I = income, and a , b , and c are positive constants. The income and price elasticities for the demand curve represented above are always

- (a) equal to one.
- (b) equal to zero.
- (c) equal (i.e., income elasticity always equals price elasticity).
- (d) constant but not necessarily equal to one another.

16. Let P denote the price of goods in the Taiwan, P^W denote the price of goods in the foreign country, and E the exchange rate, measured as the number of units of foreign currency that can be purchased with one NTD.

According to the law of one price,

- (a) $P = EP^W$.
- (b) $P^W = EP$.
- (c) $E = P/P^W$.
- (d) $P^W = E + P$.

17. Purchasing-power parity describes the forces that determine

- (a) prices in the short run.
- (b) prices in the long run.
- (c) exchange rates in the short run.
- (d) exchange rates in the long run.

18. If a McDonald's Big Mac cost \$3.06 in the United States and 3.21 euros in the Euro area, then purchasing-power parity implies the nominal exchange rate is how many euros per dollar (approximately)?

- (a) 1.05. If the value is less than this, it costs more dollars to buy a Big Mac in the U.S. than in the Euro area.
- (b) 1.05. If the value is less than this, it costs fewer dollars to buy a Big Mac in the U.S. than in the Euro area.
- (c) .95 If the value is less than this, it costs more dollars to buy a Big Mac in the U.S. than in the Euro area.
- (d) .95 If the value is less than this, it costs fewer dollars to buy a Big Mac in the U.S. than in the Euro area.

考試科目	經濟學	所別	商學院相關系所	考試時間	2月 27日(日) 第 1 節
------	-----	----	---------	------	-----------------

19. Which of the following does the level of real GDP measure?

- (a) total real income
- (b) productivity
- (c) the standard of living
- (d) All of the above are correct.

20. "When workers have a relatively small quantity of capital to use in producing goods and services, giving them an additional unit of capital increases their productivity by a relatively large amount." This statement

- (a) is an assertion that production functions have the property of constant returns to scale.
- (b) is consistent with the view that capital is subject to diminishing returns.
- (c) is inconsistent with the view that it is easier for a country to grow fast if it starts out relatively poor.
- (d) All of the above are correct.

21. If an unemployed person quits looking for work, then, other things the same, the unemployment rate

- (a) decreases and the labor-force participation rate is unaffected.
- (b) and the labor-force participation rate both decrease.
- (c) is unaffected and the labor-force participation rate decreases.
- (d) and the labor-force participation rate are both unaffected.

22. Suppose that efficiency wages become more common in the economy. Economists would predict that this would

- (a) increase the quantity demanded and decrease the quantity supplied of labor, thereby decreasing the natural rate of unemployment.
- (b) decrease the quantity demanded and increase the quantity supplied of labor, thereby increasing the natural rate of unemployment.
- (c) increase the quantity demanded and decrease the quantity supplied of labor, thereby increasing the natural rate of unemployment.
- (d) decrease the quantity demanded and increase the quantity supplied of labor, thereby decreasing the natural rate of unemployment.

23. An increase in the money supply

- (a) and an investment tax credit both cause aggregate demand to shift right.
- (b) and an investment tax credit both cause aggregate demand to shift left.
- (c) causes aggregate demand to shift right, while an investment tax credit causes aggregate demand to shift left.

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考試科目	經濟學	所別	商學院相關系所	考試時間	2月 27日(日) 第 1 節
------	-----	----	---------	------	-----------------

(d) causes aggregate demand to shift left, while an investment tax credit causes aggregate demand to shift right.

24. Sticky nominal wages can result in

- (a) lower profits for firms when the price level is lower than expected.
- (b) a decrease in real wages when the price level is lower than expected.
- (c) a short-run aggregate-supply curve that is vertical.
- (d) a long-run aggregate-supply curve that is upward-sloping.

25. Which of the following would cause prices and real GDP to rise in the short run?

- (a) an increase in the expected price level
- (b) an increase in the money supply
- (c) a decrease in the capital stock
- (d) None of the above is correct.

26. Which of the following monetary policy violates Taylor principle?

- (a) The central bank raises the federal funds rate from 1% to 2% when inflation goes from 2% to 2.5%.
- (b) The central bank raises the federal funds rate from 1% to 2% when output gap goes from 2% to 3%.
- (c) The central bank raises the federal funds rate from 1% to 2% when inflation goes from 2% to 3%.
- (d) The central bank raises the federal funds rate from 1% to 2% when output gap goes from 2% to 2.5%.

27. The M1 money multiplier will shrink due to

- (a) smaller excess reserves ratio.
- (b) smaller currency ratio.
- (c) greater time deposits ratio.
- (d) greater required reserves ratio.

28. A higher growth rate of money supply causes

- (a) lower interest rates if liquidity effect is larger than income and expected inflation effects.
- (b) higher interest rates if liquidity effect is larger than income and expected inflation effects.
- (c) lower interest rates if liquidity effect is smaller than income and expected inflation effects and the adjustment of expected inflation is slow.
- (d) lower interest rates if liquidity effect is smaller than income and expected inflation effects and the adjustment of expected inflation is fast.

29. Nowadays, most countries do not adopt monetary targeting since

- (a) the public do not understand how monetary targeting works.
- (b) the velocity of money is unstable and quite volatile.

考試科目	經濟學	所別	商學院相關系所	考試時間	2月27日(日)第1節
------	-----	----	---------	------	-------------

(c) the relationship of output and money aggregates is weak.
 (d) inflation and money aggregates have inverse relationship.

30. Which of the following statements is true?

(a) The conventional Phillips curve has microeconomic foundation.
 (b) The New Keynesian Phillips curve is merely a statistical relation.
 (c) The New Keynesian Phillips curve describes how current inflation depends on future expected inflation and unemployment.
 (d) The New Keynesian Phillips curve describes how current inflation depends on future expected inflation and real marginal cost.

Numerical/algebraic problems and short-essay questions

Please answer the following questions IN SEQUENCE. All questions may be answered in EITHER Chinese OR English.

1. A video game producer has costs of \$25,000 per month that are fixed with regard to output. The firm has a flat marginal cost at \$5 per unit of output for output between 1 and 16,000 units. The firm cannot produce more than 16,000 units. Information from the market research group indicates that the demand for the video game can be represented by the following $P = 9.8 - 0.0002Q$.

(a) (3 points) What price should be set to maximize profit? How many units of the game are sold? What are the profits of the firm?

The firm has the opportunity to sell in a second market that is separated from the first. For the second market the market research group has estimated the demand relationship to be $P_2 = 7 - 0.0001Q_2$.

(b) (5 points) The firm believes that this second market offers an opportunity for additional profit. Should it sell only units that would not be absorbed in the primary market at the profit-maximizing price or should it divert some units from the primary to the secondary market? What price would you set in each market? What is the profit of the firm?

2. Suppose there is a country producing two goods with the following technology

$$Q_X = L_X$$

$$Q_Y = K_Y$$

Suppose that the labor supply is fixed at 50 units and the capital supply is fixed at 100 units. Consumers spend

考試科目	經濟學	所別	商學院相關系所	考試時間	2月27日(日)第1節
------	-----	----	---------	------	-------------

half of their income on good X and the rest of income on good Y. All markets are perfectly competitive. Let good Y be the numeraire. Answer the following questions

- (a) (3 points) Derive the equilibrium price of X relative to Y.
- (b) (3 points) Suppose there is another country producing two goods with the same technology and consumers in that country also evenly spend their income on both goods. In this country, the supply of labor is fixed at 100 units and the supply of capital is fixed at 50 units. Derive the equilibrium price of X relative to Y if two countries trade freely.
- (c) (3 points) What is the good the capital abundant country exports? How many quantities of that good does it export?

3. Chester lives in a dormitory that offers soft drinks and chips for sale in vending machines. His utility function is $U = 3SC$ (where S is the number of soft drinks per week and C the number of bags of chips per week), so his marginal utility of S is $3C$ and his marginal utility of C is $3S$. Soft drinks are priced at \$0.50 each, chips \$0.25 per bag.

- (a) (3 points) Write an expression for Chester's marginal rate of substitution between soft drinks and chips.
- (b) (3 points) Use the expression generated in part (a) to determine Chester's optimal mix of soft drinks and chips.
- (c) (2 points) If Chester has \$5.00 per week to spend on chips and soft drinks, how many of each should he purchase per week?

4. To catch up with the living standard of the US,

- (a) (4 points) Can a sufficiently poorer country achieve this goal by simply receiving more capital donated by the United Nation on a per-capita basis? Why or why not?
- (b) (4 points) Can a sufficiently poorer country achieve this goal by simply increase her saving rate? Why or why not?

5. Use the model of aggregate demand and aggregate supply to illustrate each of the following event's short-run and long-run impacts on the aggregate price level and aggregate output.

- (a) (4 points) There is an increase in households' wealth due a stock market boom.
- (b) (4 points) The government lowers taxes, leaving households with more disposable income, with no corresponding reduction in government spending.

6. Consider a model that the central bank may have incentives to deviate from a monetary policy rule. The central bank's objective is to maximize the expected value of

$$U = \lambda(y - y_n) - \frac{1}{2}\pi^2,$$

考試科目	經濟學	所別	商學院相關系所	考試時間	2月 27日(日) 第 1 節
------	-----	----	---------	------	-----------------

where y is output, y_n is the economy's natural rate of output, π is inflation rate, and $\lambda > 0$. The aggregate output is given by a Lucas-type supply function:

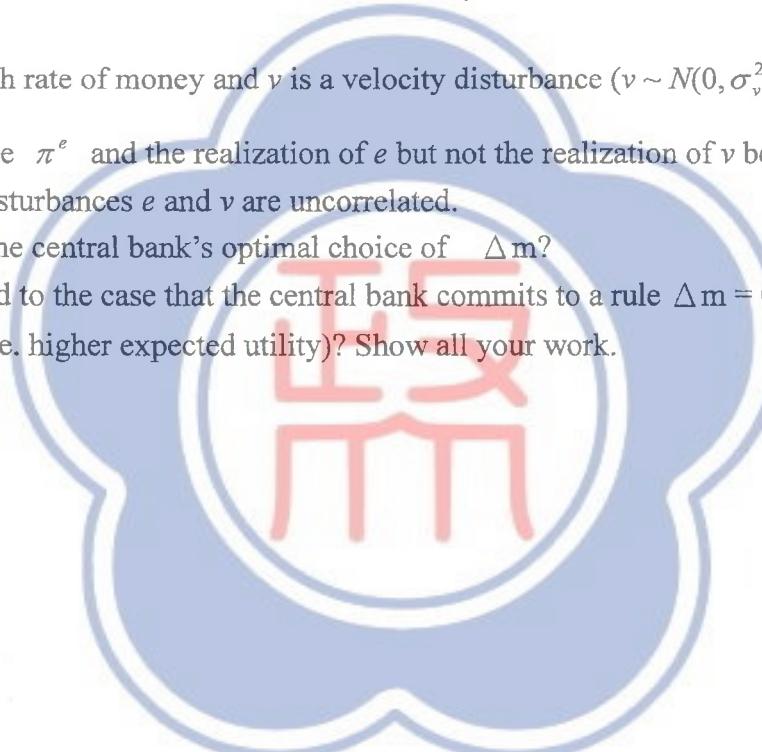
$$y = y_n + a(\pi - \pi^e) + e,$$

where π^e is expected inflation, e is a supply shock ($e \sim N(0, \sigma_e^2)$), and $a > 0$. The link between inflation and the monetary policy instrument is given by

$$\pi = \Delta m + v,$$

where Δm is the growth rate of money and v is a velocity disturbance ($v \sim N(0, \sigma_v^2)$). We assume that the central bank can observe π^e and the realization of e but not the realization of v before its choice of Δm . We also assume that two disturbances e and v are uncorrelated.

- (4 points) What is the central bank's optimal choice of Δm ?
- (4 points) Compared to the case that the central bank commits to a rule $\Delta m = 0$, which policy makes the society better off (i.e. higher expected utility)? Show all your work.



考試科目	統計學	所別	企業管理學系/組	考試時間	之月 27 日(日)第三節
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1. (15 points) 政大企研所目前有五個學程：行銷學程、人力資源管理學程、作業與運籌管理學程、企業管理與法律碩士學程及藝術產業經營學程。政大企研所學生來自國內各大學不同學院（商管學院、社科學院、文法學院、理工學院、傳播學院及其他學院）之菁英，企研所蔡主任欲了解是否來自不同學院同學的背景，會影響他們選擇不同學程的意願。於是蔡主任隨機調查 200 位同學對學程選擇之意願及其大學就讀學院。請寫出你認為應該要使用何種統計方法來分析這些資料，並寫出其虛無假設(Null Hypothesis)、對立假設(Alternative Hypothesis)、統計方法假設條件、檢定統計量及其分佈。

2. (15 points) 台灣某大企業特地委託政大企研所別教授針對其顧客服務滿意度做一調查，希望在 95% 的信心水準下，最大抽樣誤差不要超過 2.2%。另外，此企業也希望能針對他們最近欲推出新服務項目之收費標準做一調查，為了準確地估計出顧客可接受之收費標準，希望在 99% 的信心水準下，最大抽樣誤差不要超過 100 元。根據該企業過去推行過類似服務項目的經驗，顧客可接受之收費價格範圍大約在 1,000 元~5,000 元間。別教授考量此兩種狀況後，提出一份 2,000 份的調查計畫。請問你認為此份數的設定，是否可同時達成此企業兩種調查的設定誤差範圍內？如果可以，請說明如何計算出此 2,000 份的估計數，如果不可以，請說明調查份數應該為何，才能同時符合此企業兩種調查的設定誤差範圍。 $Z_{0.025}=1.96$, $Z_{0.01}=2.33$, $Z_{0.005}=2.58$ 。

3. (20 points) 文建會委託政大企研所樓教授針對台灣表演藝術市場做一調查研究，由於產業化是表演藝術未來發展的方向，因此在建構台灣表演藝術產業體系前，有必要先了解表演藝術消費者的特性與影響消費決策之關鍵。本調查研究之目的便在於期望透過全面性的綜觀表演藝術消費者輪廓（性別、年齡、居住地區、教育程度、職業、行業、個人平均月收入、婚姻狀況、消費表演藝術的類型、消費表演藝術的地點等等），與深入的透析消費者在表演藝術消費的金額，提供給表演藝術產業發展策略研擬之重要參考依據。為了能精準地描述出消費者花費在表演藝術消費的金額是受何種因素影響，樓教授特別邀請你-未來的政大企研所高材生，一起來建構此模型。

- 請寫出你認為適當之統計模型。(5 points)
- 此統計模型需要用到哪些假設條件。(5 points)
- 如何評估此模型是否適當。(5 points)
- 如何評估消費者輪廓特質與消費者花費在表演藝術消費的金額有顯著相關。(5 points)

備註	試題隨卷繳交
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考試科目	統計學	所別	企業管理學系/ 甲組	考試時間	2月27日(日)第三節
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4. (25 points) There is a fair die with side 1,2,3,4,5,6.

(a) If it is continually rolled until side 3 appears before 7. What is the total times you

expect to toss? (7 points)

(b) A fair die is continually rolled until an even number has appeared on 10 distinct rolls.

Let X_i denote the number of rolls that land on side i . Determine

(i) $E[X_1]$. (6 points)

(ii) $E[X_2]$. (6 points)

(iii) the probability mass function of X_2 . (6 points)

5. (13 points) Let X_1, X_2, \dots, X_n be independent χ^2 -distributed random variables, each with 1 degree of freedom. Define Y as

$$Y = \sum_{i=1}^n X_i.$$

(a) Justify that $Z = \frac{Y-n}{\sqrt{2n}}$ has an asymptotic standard normal distribution. (5 points)

(b) A machine in a heavy-equipment factory produces steel rods of length Y , where Y is a normally distributed random variable with mean 6 inches and variance 0.2. The cost C of repairing a rod that is not exactly 6 inches in length is proportional to the square of the error and is given, in dollars, by $C = 40(Y - \mu)^2$. If 50 rods with independent lengths are produced in a given day, approximate the probability that the total cost for repairs for that day exceeds \$480. (8 points)

6. (12 points) The opening prices per share Y_1 and Y_2 of two similar stocks are independent random variables, each with a density function given by

$$f(y) = \begin{cases} \left(\frac{1}{2}\right) e^{-\left(\frac{1}{2}\right)(y-4)} & y \geq 4 \\ 0 & \text{elsewhere} \end{cases}$$

On a given morning an investor is going to buy shares of whichever stock is less expensive.

(a) Find the probability density function for the price per share that the investor will pay. (6 points)

(b) Find the expected cost per share that the investor will pay. (6 points)

考試科目	統計學	所別	企業管理學系	考試時間	2月27日(日)第三節
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Normal Deviate z	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
-4.0	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
-3.9	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
-3.8	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
-3.7	.0001	.0001	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
-3.6	.0002	.0002	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001
-3.5	.0002	.0002	.0002	.0002	.0002	.0002	.0002	.0002	.0002	.0002
-3.4	.0003	.0003	.0003	.0003	.0003	.0003	.0003	.0003	.0003	.0002
-3.3	.0005	.0005	.0005	.0004	.0004	.0004	.0004	.0004	.0004	.0003
-3.2	.0007	.0007	.0006	.0006	.0006	.0006	.0006	.0005	.0005	.0005
-3.1	.0010	.0009	.0009	.0008	.0008	.0008	.0008	.0008	.0007	.0007
-3.0	.0013	.0013	.0012	.0012	.0011	.0011	.0011	.0010	.0010	.0010
-2.9	.0019	.0018	.0018	.0017	.0016	.0016	.0015	.0015	.0014	.0014
-2.8	.0026	.0025	.0024	.0023	.0023	.0022	.0021	.0021	.0020	.0019
-2.7	.0035	.0034	.0033	.0032	.0031	.0030	.0029	.0028	.0027	.0026
-2.6	.0047	.0045	.0044	.0043	.0041	.0040	.0039	.0038	.0037	.0036
-2.5	.0062	.0060	.0059	.0057	.0055	.0054	.0052	.0051	.0049	.0048
-2.4	.0082	.0080	.0078	.0075	.0073	.0071	.0069	.0068	.0066	.0064
-2.3	.0107	.0104	.0102	.0099	.0096	.0094	.0091	.0089	.0087	.0084
-2.2	.0139	.0136	.0132	.0129	.0125	.0122	.0119	.0116	.0113	.0110
-2.1	.0179	.0174	.0170	.0166	.0162	.0158	.0154	.0150	.0146	.0143
-2.0	.0228	.0222	.0217	.0212	.0207	.0202	.0197	.0192	.0188	.0183
-1.9	.0287	.0281	.0274	.0268	.0262	.0256	.0250	.0244	.0239	.0233
-1.8	.0359	.0351	.0344	.0336	.0329	.0322	.0314	.0307	.0301	.0294
-1.7	.0446	.0436	.0427	.0418	.0409	.0401	.0392	.0384	.0375	.0367
-1.6	.0548	.0537	.0526	.0516	.0505	.0495	.0485	.0475	.0465	.0455
-1.5	.0668	.0655	.0643	.0630	.0618	.0606	.0594	.0582	.0571	.0559
-1.4	.0808	.0793	.0778	.0764	.0749	.0735	.0721	.0708	.0694	.0681
-1.3	.0968	.0951	.0934	.0918	.0901	.0885	.0869	.0853	.0838	.0823
-1.2	.1151	.1131	.1112	.1093	.1075	.1056	.1038	.1020	.1003	.0985
-1.1	.1357	.1335	.1314	.1292	.1271	.1251	.1230	.1210	.1190	.1170
-1.0	.1587	.1562	.1539	.1515	.1492	.1469	.1446	.1423	.1401	.1379
-.9	.1841	.1814	.1788	.1762	.1736	.1711	.1685	.1660	.1635	.1611
-.8	.2119	.2090	.2061	.2033	.2005	.1977	.1949	.1922	.1894	.1867
-.7	.2420	.2389	.2358	.2327	.2296	.2266	.2236	.2206	.2177	.2148
-.6	.2743	.2709	.2676	.2643	.2611	.2578	.2546	.2514	.2483	.2451
-.5	.3085	.3050	.3015	.2981	.2946	.2912	.2877	.2843	.2810	.2776
-.4	.3446	.3409	.3372	.3336	.3300	.3264	.3228	.3192	.3156	.3121
-.3	.3821	.3783	.3745	.3707	.3669	.3632	.3594	.3557	.3520	.3483

考試科目	管理學	所別	企管管理系/甲組 乙組	考試時間	2月27日(日)第三節
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一、Frank 為某連鎖體系之某一分店店長。由於景氣影響，總公司決定調整員工的薪資制度，將原本「高底薪低獎金」制度調整為「低底薪高獎金」，但此制度的調整被大多數員工解讀為變相減薪，就連 Frank 也認為如此，但總公司要求各家店長向所屬員工傳達命令，並負責安撫員工的不滿，如果您是 Frank，請應用幾個您熟悉的激勵理論向公司建議應如何調整制度，不但能安撫員工的不滿，且能讓員工因受到更大的激勵而創造業績。(20%)

二、某公司為一家已成立五十年的眼鏡鏡框製造公司，由於成功地和生產大型鏡片的工廠客戶聯手開發出領先全球的鈦金屬鏡框，多年以來，完全從事 OEM 生產(接受品牌公司委託後生產)，也就是承包代工，從客戶得到設計圖或版面後再製作，全部客戶僅有五家，由於掌握技術及品質，所以業績極好，生意興隆。然而最近幾年，眼鏡從單純的視力矯正工具，開始轉變成流行裝飾的時代，愈來愈多企業和知名名牌簽訂使用授權契約，業界對於設計和顏色等等的關注，也隨之提高。當公司還沉浸在享受領先全球的技術開發利益時，其他公司陸續成功開發出鈦金屬鏡框，於是獨占優勢崩解，單價也應聲直落。而五家客戶裡最主要的一家公司也不再下訂單。為因應局勢，公司成立營業部門，開始尋求新客戶，轉型成企劃提案型的 OEM 生產，跨出了自有品牌的第一步。目前本公司營業比例中 OEM 佔 95%，自有品牌販賣佔 5%，客戶超過了 100 家，營業額也逐步增加。但客戶認為企劃和設計不過是附帶的免費服務而已，因此很難提高售價，導致毛利仍無法提高，對公司而言，如何才能改善目前低毛利是最重要的課題，所以是否應該繼續維持現在這種以 OEM 為主體的企業型態或走向自有品牌，是公司最重要的關鍵。第二代接班人希望把自有品牌商品的銷售比例從 5% 調高到 30% 左右，請問：

- (1) 公司原本以代工業務為主的競爭優勢為何？為提高自有品牌商品銷售比例，公司應強化哪些方面的競爭優勢？(10%)
- (2) 為提高自有品牌商品銷售比例，公司可能面臨哪些挑戰？(10%)
- (3) 對於公司改變以 OEM 為主體的企業型態做為改善毛利的策略，請問您贊成或反對？理由為何？(10%)

備註	試題隨卷繳交
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考試科目	社會學	所別	企管碩班 乙組	考試時間	2月27日(日)第三節
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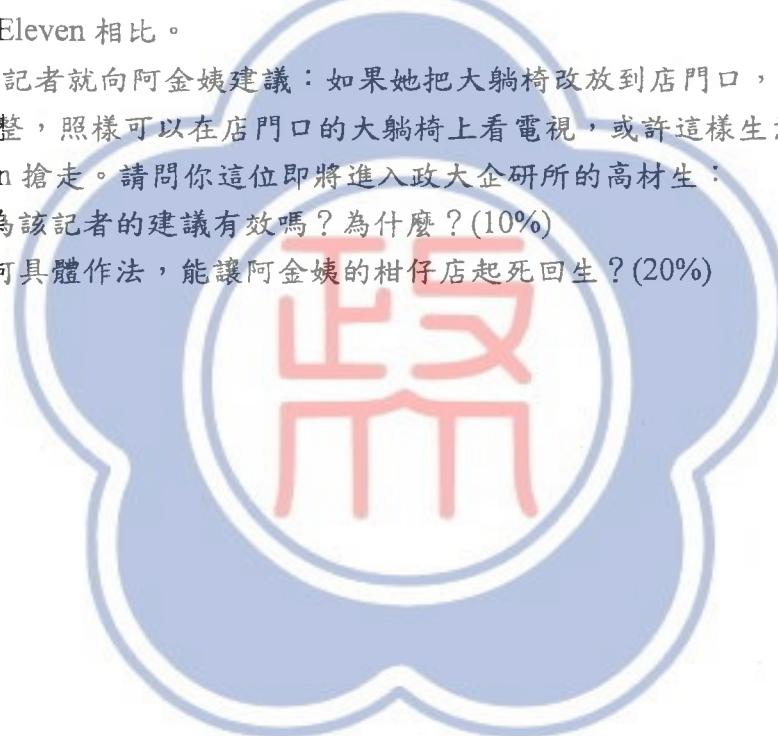
三、何謂「有限理性」(bounded rationality)？請說明「有限理性」與「行為決策觀點」之間的關聯性。(20%)

四、一名記者於一年前，回到台南鄉下老家，他赫然發現在老家隔壁「阿金姨柑仔店」的正對面開了一家 7-eleven，兩家店形成強烈的對比（註：阿金姨的柑仔店在村裡開店已 40 多年，全村沒人不認識她）。

- 阿金姨：對面的 7-eleven，搶走了她不少的生意，日子是愈來愈難過囉！
- 記者：打量著柑仔店裡的陳設、外觀等，的確是沒有一個地方能與 7-Eleven 相比。

該記者就向阿金姨建議：如果她把大躺椅改放到店門口，電視的方向稍為調整，照樣可以在店門口的大躺椅上看電視，或許這樣生意就不會被 7-Eleven 搶走。請問你這位即將進入政大企研所的高材生：

1. 你認為該記者的建議有效嗎？為什麼？(10%)
2. 你有何具體作法，能讓阿金姨的柑仔店起死回生？(20%)



考試科目	微積分	所別	企管系	考試時間	2 月 27 日(星期日) 下午 13:20 ~ 15:00	第 3 節
1.	A manufacturer must produce a sturdy rectangular container with a square base and a volume of 128 cubic feet. The cost of materials making up the top and four sides is \$2 per square foot, while the cost of the materials making up the bottom is \$6 per square foot. Find the dimensions of the box that minimizes the cost of the materials.					(10%)
2.	Suppose the rate of sales of a new product is given by $1000x^2e^{-x}$ items per week, where x is the number of weeks from the introduction of the product. How many items are sold in the first three weeks?					(20%)
3.	A commodity is introduced with an initial price of \$5 per unit, and t months later the price is $p(t)$ dollars per unit. A study indicates that at time t , the demand for the commodity will be $D(t) = 3 + 10e^{-0.01t}$ thousand units and that $S(t) = 2 + p(t)$ thousand units will be supplied. Suppose that at each time t , the price is changing at a rate equal to 2% of the shortage $D(t) - S(t)$.					
	a.	Set up a differential equation for the unit price $p(t)$.				(5%)
	b.	Solve the differential equation for $p(t)$.				(15%)
	c.	At what time is the unit price the largest? What is the maximum unit price and the corresponding supply and demand?				(5%)
	d.	What happen to the price in the "long run" (as $t \rightarrow \infty$).				(5%)
4.	Suppose that t years from now, one investment will be generating profit at the rate of $50 + t^2$ hundred dollars per year, while a second investment will be generating profit at the rate of $200 + 5t$ hundred dollars per year.					
	a.	For how many years does the rate of profitability of the second investment exceed that of the first?				(5%)
	b.	Compute the net excess profit for the time period determined in part (a). Interpret the net excess profit as an area.				(15%)
5.	Jane is about to enter college. When she graduates 4 years from now, she wants to take a trip to China that she estimates will cost \$5,000. How must she invest now at 7% to have enough for the trip if interest is compounded:					(10%)
	a.	Quarterly	b.	Continuously		
6.	Suppose that nationwide, approximately 90% of all income is spent and 10% is saved. What is the total amount of spending generated by a \$40 billion tax rebate if savings habits do not change?					(10%)
本考試： <input type="checkbox"/> 不需使用計算機， <input checked="" type="checkbox"/> 使用計算機						
備 考	試 題 隨 卷 繳 交					

考試科目	管理實務個案	所別	企業管理學系 丙組	考試時間	2月27日(日)第一節
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管理實務個案，共三大題，共 100 分。

一、A 公司為一家電子消費產品專業製造代工廠商，近年由於代工利潤逐漸降低，故 A 公司考慮發展自有品牌以提昇利潤，若此策略可行，請解釋可能的理由與假設前提為何？並說明應該如何進行以及應該注意的事項？(25 分)

二、B 公司為生產一傳統日常生活用品之品牌商，其產品在一般藥房與藥妝店通路販賣，鑑於電子商務銷售快速成長，B 公司擬將其產品透過網路來販賣，請問此項作法若可行的話，其可能的理由與假設前提為何？(25 分)

三、C 公司為一家保健食品品牌商，過去從製造傳統保健產品起家，後來業務已擴及至日常生活用品等產品，目前傳統保健品與日常生活用比銷售比例約為二比一。因為日常生活用品產業的平均獲利率超過 30%、以及平均每年超過 20% 的增長幅度，吸引了無數國內外企業的進入。X 國市場幅員遼闊，不同區域、城鄉的生活消費習慣皆不同，城市與農村市場消費差異大，造成交易方式與通路結構的不同。城市的目標顧客族群主要為中高收入之白領階級，但城市地區市場進入障礙高，促銷成本高，競爭品牌多，消費者面臨可選擇性品牌多；然而，以鄉鎮農民為代表的低收入市場，競爭品牌少，消費者可選擇性少，促銷成本低，消費者需求個性化不明顯，消費者對產品的價格變化最為敏感，鄉村市場雖佔 X 國 80% 的人口數，但卻僅佔日常生活用品產業之 40% 的銷售量。

在城市地區，C 公司在大品牌夾縫中勉強生存，但在鄉村市場中，C 公司約有七成的市佔率，C 公司之城市與鄉村銷售比例為 20：80。早期 C 公司的通路政策是透過區域代理將產品賣到經銷商，再透過經銷商賣到終端零售商，而消費者在零售商購買他們所需的產品。對 C 公司來說，雖然這樣的作法可以節省運輸倉儲成本，但對終端零售商的控制力比較弱，也較難取得消費者的訊息。故 C 公司開始改變銷售方式，在各地設立自己的銷售分公司，由銷售分公司直接賣給零售商。銷售分公司直接銷售的優勢逐漸取代區域代理商之銷售；在有些未進入之市場，C 公司利用銷售分公司直接販賣給消費者，C 公司在全國已設立 300 多家銷售分公司。透過上述的銷售通路，C 公司在農村的佈局十分綿密，即使在小村子中，一半以上的小店都能買到 C 公司之傳統保健產品。隨著 C 公司銷售通路的穩健佈置，而其產品種類亦開始增加，包括膏霜類、洗滌類等日常生活用品，通路依然沿用原有的銷售通路。在城市地區，因大賣場與連鎖超市快速成長，C 公司亦開始透過這些通路將產品賣給消費者。除此之外，C 公司也開始在城市地區設立自己的專賣店以販賣其所有的產品。近年來因傳統保健品低階市場業務成長趨緩，C 公司亦開始開發高階護膚品領域之產品，並擬將此部分產品以直銷方式販售到全國。

(1) 請問 C 公司的通路政策是否有問題？若有問題，請說明應該如何解決此問題？請說明其理由與假設前提。(25 分)

(2) 若您為 C 公司的 CEO，請提出您經營策略，並說明其理由與假設前提。(25 分)