

考試科目	經濟學	所別	科技管理丙	考試時間	星期	月	日	上午第	下午第	節
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一、說明交易成本、代理成本與經濟組織的關係。

二、為何「行為」比「結構」更應是公平交易委員會會關切的對象？

三、廠商的訂價策略應如何考量需求的價格彈性？

四、請以經濟理論分析「統一超商如何配置每店三十坪空間於二千種(2,000種)品項的商品，每種品項的擺設空間大小應如何決定？

各 25%

考試科目

問題分析與決策所 別

科技管理

考試時間

星期 月 日 上 下 午 第 節

一、請分析國內當前大學學費問題，並說明你的建議。

二、請分析當前國內產業發展問題，並說明你的建議。

三、請分析當前國內生活品質問題，並說明你的建議。

四、請分析國內最近的「鐵達尼號」電影（風行現象，並說明你的看法。「未看過」者，可自行挑一部「看過的」風行電影分析」。

各 25%

考試科目	商學總論	所別	研管所西	考試時間	4月26日 上午第3節 星期 日
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1. 解釋名詞(36%)

- 初級市場
- 選擇權
- 認購權証
- 技術生命週期
- 家庭生命週期
- 市場失靈
- 政府失靈
- Multi-dosmetic
- EDI
- TQM
- BOM
- BTO

2.(a)請敘述資訊導向的企業組織有哪些特性？

(b)並分別以半導體晶圓代工、便利超商連鎖店、及管理顧問公司三者為例說明之。(10%)

3.(a)政府在現代經濟社會中扮演哪些角色？

(b)政府可從那幾方面對企業從事規範與鼓勵？(10%)

4. 台灣企業逐漸國際化及西進、南進後，一般在人力資源管理上碰到那些問題？(10%)

5. 十年前的中小企業特性與目前新興的中小企業有何異同？(10%)

6. 風險管理的方法有哪幾類？以中油、聯電及華航的工安及飛安為例，他們各做了哪些防範？還有哪些沒做到？(10%)

試科目	商學總論	所別	研管所	考試時間	4月26日 上午第3節
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7. 閱讀測驗(14%)

McJITters

Alongside the enormous stands for Coke and Disney, one of the main features of McDonald's recent convention was a huge demonstration kitchen. Thousands of franchisees queued for a chance to peer from a catwalk at the burger flippers below. McDonald's new "Made for You" system, which has taken five years to prepare, is crucial to its future. It also marks a rare attempt to bring just-in-time (JIT) manufacturing techniques to a service industry.

McDonald's denies that its new system, which costs around \$25,000 to install, has anything to do with competitors' burgers tasting better—it is just responding to customers' needs. But "Made for You" is plainly an answer to the charge that made-to-order food from rivals such as Burger King and Wendy's tastes fresher. At present, McDonald's franchisees often batch-cook their meals for busy periods. The food then loses some of its flavor sitting around.

McDonald's spent a lot of time studying manufacturing systems like Toyota's. Its new systems is a mixture of technology and reorganization. The technology includes gadgets that can toast buns in 10 seconds, and ovens that can keep burgers fresh for up to 20 minutes. But the main point of the system is speed. The aim is to serve each customer within 90 seconds of ordering.

The moment a Big Mac is ordered, a computer screen in the kitchen tells one of the workers to start assembling it. Meanwhile, by monitoring the flow of orders, the computer also estimates future demand, indicating when to start cooking things (like fries) that cannot be squeezed into the 90-second slot.

It remains to be seen whether the franchisees embrace the system. "Made for You" should help cut stock costs, and there may be some staff savings. But the proof of the pudding will, so to speak, be in the burgers. An early indicator of their taste came from one franchisee who has installed the new system and who told the Orlando Sentinel that his staff "have started eating the food again".

(The Economist April 4th 1998)

- (a) 為何麥當勞要推出"Made for You"系統?
- (b) 試描述"Made for You"系統的內涵。

考試科目	經濟學	所別	科技管理研究所	考試時間	月 日 上午第 節
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(甲組)

(一)單選題, 每題 3 分, 共 72 分

*為避免閱卷發生遺漏, 請按下列格式填上答案:

(一)單選:	1.	2.	3.	4.	5.
	6.	7.	8.	9.	10.
	11.	12.	13.	14.	15.
	16.	17.	18.	19.	20.
	21.	22.	23.	24.	

- Suppose that General Motors decreases its prices and Ford and Chrysler follow this with their own price decreases. Which of the following is true?
 - This conduct is consistent with the kinked demand curve theory, but not the price leadership theory.
 - This conduct is not consistent with the kinked demand curve theory, but it is consistent with the price leadership theory.
 - The kinked demand curve theory cannot be applied to the auto industry, since it is not an oligopoly.
 - The kinked demand curve theory cannot be applied since it is a theory of monopolistic competition, and the auto industry is an oligopoly.
 - This conduct is consistent with both the kinked demand curve and the price leadership theories.
- In the case of a backward-bending labor supply curve,
 - the income effect always dominates the substitution effect.
 - the substitution effect always dominates the income effect.
 - the substitution effect is always equal to the income effect.
 - the substitution effect dominates the income effect along the positively sloped segment of the curve.
 - the substitution effect dominates the income effect along the negatively sloped segment of the curve.
- Suppose the parking authorities at your college campus decide to increase the revenue earned from parking stickers by increasing sticker prices. Which of the following must they believe to be true?
 - Parking on campus is a luxury.
 - There are few, if any, substitutes for parking on campus.
 - The cost of a sticker is a large percentage of your income.
 - Parking stickers are inferior goods.
 - Demand for parking on campus is price elastic.
- Many people argue against increasing the minimum wage because in their opinion the result would be increased unemployment. Which of the following best summarizes this argument? A higher minimum wage would
 - Increase the supply of labor while decreasing the demand for labor.
 - decrease the supply of labor while increasing the demand for labor.
 - increase the quantity supplied of labor while decreasing the quantity demanded of labor.
 - decrease the quantity supplied of labor while increasing the quantity demanded of labor.
 - increase the supply of labor while decreasing the quantity demanded of labor.

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(甲組)

5. Externalities are defined as
 - A. any productive processes external to the firm.
 - B. unpriced byproducts of consumption or production that harm or benefit those not involved in the transaction.
 - C. policies that firms undertake to sell outside the country.
 - D. managers' dealings with managers outside the firm.
 - E. none of the above.
6. The value of cross-price elasticity of demand between popcorn and peanuts is positive. This indicates all of the following except one. Which one?
 - A. Popcorn and peanuts must be substitutes.
 - B. An increase in the price of popcorn will shift the demand curve for peanuts to the right.
 - C. An increase in the price of peanuts will shift the demand curve for popcorn to the right.
 - D. A decrease in the supply of peanuts will shift the demand curve for popcorn to the right.
 - E. Popcorn demand and peanut demand are price elastic.
7. A rise in price along the elastic segment of a given demand curve will
 - A. decrease total utility, marginal utility, consumer surplus, and consumer expenditure.
 - B. decrease total utility, consumer surplus, and consumer expenditure, and increase marginal utility.
 - C. decrease total utility and consumer surplus, and increase consumer expenditure and marginal utility.
 - D. increase consumer surplus through a decrease in consumer expenditure.
 - E. decrease consumer surplus through an increase in consumer expenditure.
8. Which of the following is true of a perfectly competitive firm that operates in the short run at the profit-maximizing quantity but not true of a monopolist that does not practice price discrimination?
 - A. Marginal revenue is less than marginal cost.
 - B. Price is greater than marginal cost.
 - C. Marginal revenue equals marginal cost.
 - D. Price equals marginal cost.
 - E. Marginal revenue is greater than average revenue.
9. If a firm is better off operating than shutting down, what is true at the quantity where marginal cost equals marginal revenue?
 - A. Profit is maximized.
 - B. Average cost equals average revenue.
 - C. Total cost equals total revenue.
 - D. Revenue is maximized.
 - E. Cost is minimized.
10. If two perfectly competitive firms have the same short-run supply curve, then they must have the same
 - A. marginal cost and average total cost curves.
 - B. marginal cost and average fixed cost curves.
 - C. average total cost and average fixed cost curves.
 - D. average fixed cost and average variable cost curves.
 - E. marginal cost curves.

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11. Which of the following is true of marginal revenue for a monopolist that does not price discriminate?
- $P = MR$ because there are no close substitutes for the monopolist's product.
 - $P > MR$ because the monopolist must decrease price on all units sold in order to sell an additional unit.
 - $P < MR$ because the monopolist must decrease price on all units sold in order to sell an additional unit.
 - $AR = MR$ because there are no close substitutes for the monopolist's product.
 - $P = MR$ only at the profit-maximizing quantity.
12. What is the effect of imposing a \$100 lump-sum tax on a monopolist that continues to operate after the tax?
- The firm experiences no change in the profit-maximizing price or quantity, or in its profit.
 - The firm experiences no change in the profit-maximizing price and quantity, but its profit decreases.
 - The firm experiences no change in the profit-maximizing price and quantity, but its profit increases.
 - The firm's profit-maximizing quantity increases, but price does not change.
 - The firm's profit-maximizing price decreases, but quantity does not change.
13. Which of the following is most likely to be an increasing-cost industry?
- An industry whose firms experience diminishing marginal productivity.
 - An industry whose firms experience economies of scale.
 - An industry that is a major buyer in the markets for the inputs it uses.
 - An industry that is a very small buyer in the markets for the inputs it uses.
 - An industry that is a major seller in the markets for its outputs.
14. With perfect price discrimination,
- the marginal revenue curve becomes steeper.
 - the demand curve also becomes the marginal revenue curve.
 - the demand curve is steeper than the marginal revenue curve.
 - the demand curve is not as steep as the marginal revenue curve.
 - there is no way to define marginal revenue.
15. If the firms in a monopolistically competitive industry are incurring short-run losses, which of the following will occur in the long run?
- Some firms will leave the industry.
 - Customers of firms that leave the industry will switch to remaining firms.
 - Firms that remain in the industry will face increased demand.
 - Firms will continue to incur losses.
 - A, B, and C.

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16. If the central bank had to choose between fixing the interest rate and fixing the supply of money,
- it would always fix the money supply, so that the price level would be stable.
 - it would always fix the money supply, so that spending would be stable.
 - it would always fix the interest rate, so that investment would be stable.
 - it would always fix the interest rate, so that demand for money would be stable.
 - neither alternative would be clearly better than the other.
17. In combating stagflation,
- a government-induced increase in aggregate demand would help reduce inflation but aggravate unemployment.
 - a government-induced decrease in aggregate demand would help reduce unemployment but aggravate inflation.
 - a government-induced increase in aggregate demand would help reduce unemployment but aggravate inflation.
 - the experience of the 1970s proved that Keynesian economics was crucial.
 - a decrease in aggregate supply would solve the problem.
18. When money is included in the model, the effect of expansionary fiscal policy on real GNP are
- magnified because of the increase in the interest rate.
 - magnified because of the decrease in the interest rate.
 - diminished because of the increase in the interest rate.
 - diminished because of the decrease in the interest rate.
 - unchanged.
19. The crowding-out effect of higher interest rates can be avoided by
- expansionary fiscal policy.
 - expansionary monetary policy.
 - contracting monetary policy.
 - decreasing taxes.
 - none of the above.
20. An increase in required reserve ratio would tend to
- raise excess reserves and raise the money multiplier.
 - lower excess reserves and raise the money multiplier.
 - increase excess reserves and lower the money multiplier.
 - lower excess reserves and lower the money multiplier.
 - none of the above.

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21. According to the law of comparative advantage, an individual should produce a good if he or she
- has the lowest opportunity cost of producing the good regardless of whether it is produced with the fewest resources.
 - has the lowest opportunity cost of producing the good and can produce it with the fewest resources.
 - has the greatest opportunity cost of producing the good regardless of whether it is produced with the fewest resources.
 - has the greatest opportunity cost of producing the good and produces it with the fewest resources.
 - can produce it with the fewest resources.
22. Of the following fiscal programs, which has the least effect, per dollar, on aggregate demand?
- defense spending.
 - road construction.
 - grants for scientific research and development.
 - social welfare.
 - government purchases of labor.
23. Raising the discount rate is
- an expansionary policy, because it raises the ratio of excess to total reserves in the banking system.
 - a contractionary policy on the part of member banks of the Federal Reserve System, because it raises firms' costs of borrowing from them.
 - a contractionary policy on the part of the Fed, because it raises commercial banks' cost of borrowing from it.
 - an expansionary policy on the part of member banks of the Federal Reserve System, because it raises their profits relative to those of nonmember banks.
 - an expansionary policy on the part of the Fed, because increasing the interest rates banks are allowed to charge will increase their willingness to make loans.
24. From a Keynesian viewpoint, under which of the following conditions would monetary policy be less effective?
- both the demand curve for money and the demand curve for investment are flat.
 - both the demand curve for money and the demand curve for investment are steep.
 - the demand curve for money is flat and the demand curve for investment is steep.
 - the demand curve for investment is flat and the demand curve for money is steep.
 - both the quantity of money demanded and the quantity of investment demanded are very sensitive to changes in the interest rate.

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(二)計算題,每題 4分共 28分.

*為避免閱卷時發生遺漏,請將每一題之最後答案彙總在一起,如下列格式:

(二)計算題

1.	_____
2.	_____
3.	_____
4.	_____
5.	_____
6.	_____
7.	_____

- If the demand curve for good X is $Q = 1000 - P^2$, where Q and P are the quantity demanded and price of good X, respectively. Compute the price elasticity at $P=20$.
- Suppose a monopoly firm is producing good A. Given the following information:
 marginal revenue = $2000 - 40Q$
 marginal cost = $200 + 20Q$
 Compute the ^{total} profit for good A sold at equilibrium level.
- $C = 1000 + 0.75(Y - T)$, $I = 3000$, $G = 2000$, $T = 2000$, $X = 4000$ and $M = 1000 + 0.25Y$, where C, I, G, T, X, M, Y are consumption, investment, government spending, tax revenue, export, import and GNP, respectively. Compute the trade deficit (or trade surplus) at the equilibrium level of GNP.
- Compute the government expenditure multiplier in above question.
- If the CPI for 1996 and 1997 are 120 and 130, respectively, what is the inflation rate for the 1997?
- In an economy in which the growth rates of income velocity of money and real GNP are 2% and 4%. According to "The Quantity Theory of Money", a 12% growth rate in the money supply would result in how much percentage growth in price level?
- If your total utility function is \sqrt{XY} , which X and Y are two goods. The price of good X is \$10 and the price of good Y is \$20. you have income \$240. Compute the maximum utility that you can achieve.

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壹. 求極限值: $-\lim_{x \rightarrow 0^+} x^{\ln x} = \lim_{x \rightarrow \infty} (\sin \frac{1}{x} + \cos \frac{1}{x})^x$ (16%)

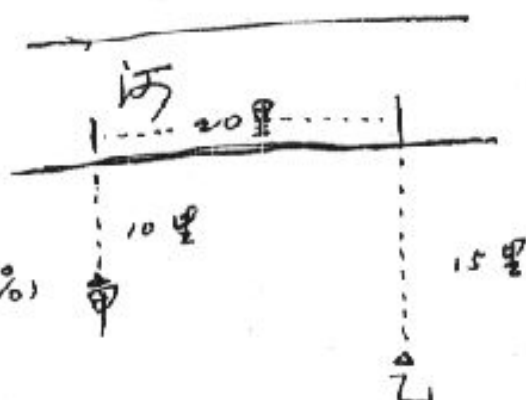
貳. 求值: $-\int_0^{\infty} \frac{t^2}{(1+t)^5} dt = \text{由圓柱 } x^2+y^2=1 \text{ 及平面 } z=2x+3 \text{ 與 } z=0 \text{ 所圍體積}$ (16%)

參. 積分: $-\int \frac{x^3}{(1-x)^{10}} dx = \int \sin(\ln x) dx$ (16%)

肆. 作圖: $-y = \sqrt[3]{x^2-x^3} = x^2y^2 - 4x^2 + y^2 = 0$ (16%)

伍. 某設備今後 t 年之售價為 $y = 80000e^{\sqrt{t}}$ 元
若銀行之年利率為 9% (連續複利計息) 問
何時出售存入銀行最為有利? (10%)

陸. 甲乙二廠離河 10 里及 15 里
但沿河距 20 里 (如右圖) 若想
在河邊設一污水處理站. 應
在何處管線最短. (10%)



柒. 在橢圓 $4x^2 + 9y^2 = 36$ 之外
作相切菱形. 求其最小面積. (16%)

考試科目	管理學	所別	科技管理研究所	考試時間	4月26日 上午第三節 星期日
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科技管理研究所研究生(甲組)入學考試管理學試題

壹、是非題(共12分,每題1.5分)

1. Mintzberg concluded that managers perform four different management roles.
2. When planning is inaccurate, it completely wastes management time.
3. Load charts schedule capacity by work center/units.
4. The critical path is the most time-consuming sequence of events in a project.
5. Equity theory suggests individuals' primary concern is with absolute rewards.
6. To enhance motivation, rewards should be linked to effort.
7. All leaders should ideally be managers.
8. If behavioral theory of leadership holds, individuals can be trained to be leaders.

貳、選擇題(共12分,每題1.5分)

1. Which of the following management roles is NOT interpersonal?
a. figurehead b. leadership c. entrepreneur d. liaison
2. Which of the following types of plans attempts to be the MOST flexible?
a. directional plan b. long-term plan c. specific plan d. strategic plan
3. What is the major strength of a zero-base budget?
a. its widespread use and acceptability
b. its simplicity and emphasis on prior budgets
c. it is a way to identify inefficiency and waste
d. all of the above
4. The more rules and procedures in the organization, the more
a. complex it is b. centralized it is
c. formalized it is d. successful it will become
5. Which of the following would be considered a motivator by Herzberg:
a. company policy b. good working condition
c. flexibility d. achievement
6. According to the three-needs theory of motivation, the most successful managers have
a. high nAch; low nPow b. high nAch; low nAff
c. low nAff; high nPow d. low nAch; high nAff
7. 透過下列那一個理論, 可以使用 computer program 來幫助經理人選擇最適當的 leadership style?
a. Fiedler (contingency) model b. Trait theories of leadership
c. Path-goal theory d. Leader-participation model
8. Which of the following is best suited (適合) for well-structured problems?
a. rules b. procedures c. policies d. all of the above

參、解釋名詞(25分,每題2.5分) — [請不要僅僅英翻中,務必要加以說明]

1. Satisficing
2. Benchmarking
3. Groupthink
4. Contingency Approach
5. TQM
6. Core Competence
7. Virtual Corporation
8. Re-engineering
9. Retrenchment Strategy
10. Vertical Integration

肆、問答題(共39分)

1. 完美的 rational decision making 包括那些主要的假設/情況?(5分)
2. (1) 請分別說明 Functional Structure 及 Divisional Structure 的優缺點。(5分)
(2) 請說明公司採用 Matrix (矩陣式) Structure 的優缺點。(3分)

考試科目	管理學	所別	科技管理研究所	考試時間	4月26日 上午第三節 星期日
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3.請選擇一家你(妳)較熟知的公司作答：

- (1) 請以 Michael Porter (波特) 的「產業五力分析」模式來分析說明該公司所處的產業狀況。(5分)
- (2) 請對該公司進行 SWOT 分析。(4分)

4.請分別說明高科技產業與服務業的特性。(6分)

5.如果有一個經理人(leader)的績效不好，請問：若從 Fiedler(contingency) leadership theory 的觀點來看，有什麼方法可以來加以改進？(5分)

6.依據 Equity theory 的相關理論，如果員工的 payment 是依時間來計(by time)，則當員工發現自己是 underrewarded 時，可能採取什麼樣的行動？如果發現自己是 overrewarded 呢？(6分)

伍、個案分析(12分) - 請閱讀以下的文章後回答問題

Setting Strategies at Drypers Corporation

When you're king of the hill, there's always someone who wants to knock you down. And, if you're not careful, removing you can easily be done. Consider that David slew Goliath, that Wal-Mart replaced Sears as America's number one retailer, and that little Microsoft Corporation has consistently outsmarted IBM. How were these feats accomplished? Through careful planning.

Years ago, companies like Procter & Gamble and Kimberly-Clark dominated the U.S. market for disposable diapers. Their big brand sellers, Pampers and Huggies, respectively, were the clear winners in the \$4 billion a year disposable diaper industry, holding some 85 percent of the market share between them. Today, however, competition is getting fierce. And much of the chase of the big two is coming from Dave Pitassi and Wally Klemp, cofounders of Drypers Corporation. The two college buddies from Portland, Oregon, dreamed up their business idea while students. Although their venture was not highly regarded by those around them, they never gave up hope. They knew from their research that there had to be a market for a quality, off-market diaper. But they had to have a focused plan to go up against the likes of Procter & Gamble.

In 1988, at age twenty-three, the two developed a business plan designed to show financial backers how they would become a low-cost producer of quality disposable diapers. Although they ran into several roadblocks along the way, the two persevered. Pitassi and Klemp's main thrust was to use materials from local businesses in their production of disposable diapers. This approach enabled them to manufacture a cheap but good-quality diaper. In its first year, Drypers generated just over \$100,000 in sales. Then the world opened up. Because of careful long-term planning and several marketing ploys, Drypers sales jumped to \$35 million by the end of the third year. And, with a careful analysis of how to expand even more, Drypers acquired two regional diaper manufacturers. By the end of 1996, sales had reached over \$150 million. Today, Drypers continues its strong growth and now accounts for more than 6 percent of the disposable diaper market.

Questions:

1. Michael Porter identified three generic strategies that companies can follow to develop a competitive advantage. Which one of the three do you believe Drypers is using? Discuss and support your choice.
2. How would you recommend they exploit their competitive advantage? How can they sustain it?

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個案一：選擇決策方式 (50%)

在組織裡的決策，依其參與的程度，大約可以分成以下幾種方式：

- A1：你利用手邊現有的資料獨自解決問題或做決策。
- A11：你向部屬搜集資料，然後單獨解決問題。你可以告訴部屬向他搜集資料的目的，也可以不告訴他。你的部屬所扮演的角色只是遵照你的要求提供資料，並不參與評估可行方案。
- C1：你將問題告知有關的部屬，聽取他的意見和看法，然後由你做決定。最後的決定中可能包含了部屬的看法，也可能沒有。
- G1：你將問題告知有關的部屬，同時在自由、開放的氣氛中和他們一起分析問題，並獲得一個共同滿意的答案。你和部屬均貢獻個人的智慧和知識來解決問題，這之間並沒有正式的職權關係。
- D1：你將問題交給有關的部屬處理，同時將有關的資料提供給他做參考。這位部屬對於問題解決的方式負全責，他的任何決策都將獲得你的支持。
- C11：你利用某一次正式的會議，將問題告訴部屬，同時聽取他們的意見和看法，然後由你做決定。這個決定中可能包含了部屬的看法，亦可能沒有。
- G11：你將問題告知有關的部屬，同時共同評估各個可行方案，並設法達成一個看法一致的解決方案。你所扮演的角色只是一個討論會中的主席或協調者，使討論能針對主題來進行，同時不忽略掉關鍵的部份。你應注意儘量不要讓個人的身份影響到部屬的看法。

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下面有三個個案，說明了各種狀況。請針對這一個個案，回答以下各問題，並提出理由。

1. 若你是當事人，你會採取什麼行動？
2. 這是一個個人的問題，還是群體的問題？
3. 你將採用那一種決策的方式？

個案 製藥公司

你是一家小型製藥公司的執行副總理。目前你有機會從國防部爭取到一張有關生物戰藥品的合約。這張合約中的藥品並不在貴公司原有的業務範圍之內，同時整個製程亦和原有的不同。但是由於貴公司目前有許多閒置的產能，因此爭取這張合約仍具有經濟的利益。

此刻你已經完成了整個報價計劃書，所急待決定的是產品的最後報價，以使得公司能贏得這筆交易。你不能報得太高，否則將使你的競爭者贏得這項合約；你也不能報得太低，那樣將使你無利可圖。

從事這項決策時有許多因素需加考慮，這些因素包括新增原料的成本，以及新增一位客戶所增加的行政管理負擔等。還有一些不足為外人道的因素，例如你的競爭對手可能的報價之類。目前你正積極的將這些考慮因素加以彙總，準備做決策，但是你發現還有一個無法克服的「死結」。這個問題來自你手下的一位經理，他所管轄的工廠將負責製造合約的產品，在你的部屬中，祇有他有辦法推算出為生產新產品而調整現有設備所需的成本，同時為了使生產的產品能符合合約的規定，他的支持和合作亦是絕對必要的。但是，從最初開始進行這項合約時，他便表現得非常不贊成。根據他個人過去的經驗，並沒有足夠的能力來評估這項專案，因此你對於他的意見並不重視。同時，從幾次的討論中，你發現他的反對主要是意識形態上的差異，而非基於經濟上的考慮。你突然想到他經常參與該地區「和平組織」的活動，同時一直是越戰的堅決反對者。

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個案二

Information Reports, Inc.

(50%)

Jane Haynes was recently promoted to sales manager for Information Reports, Inc. Information Reports gathers data from huge business data bases and formulates it into reports that are sold to business firms. Reports include everything from credit reports to airline schedules to market research. Information Reports' major competitor is Dun & Bradstreet, a large firm that is considered agile and innovative. Information Reports' growth has been rapid; about the time Haynes was promoted, eight new sales persons were added to her staff. They were recent college graduates and eager to make a mark with the company.

Within a few months, one of the new staffers approached Haynes with an idea for a new product. A customer needed specialized data and, if the price was right, this report could be a profitable new area for Information Reports to enter. Haynes helped the new employee develop a proposal for the executive vice president, seeking permission to develop the new product. Three weeks passed, and permission was not yet granted.

Haynes decided to go ahead and establish a product design team on a trial basis that would consist of one person each from the sales, administrative services, and information analysis departments. Haynes later received an okay from the executive vice president and talked to other department heads about the change.

The design team produced the new report in just three weeks. The customer was very satisfied, and several other customers were excellent prospects as buyers for the new report.

Seeing the success of the new report, other new sales people began to suggest new product possibilities. Some older sales people were skeptical because the new products changed the products they were used to. They gradually agreed to go along if an idea worked out but were reluctant to make suggestions of their own.

Soon Haynes had several design teams coordinating work on new information products. She even recommended that the teams do special "upset" analyses to look for unusual product variations of existing reports.

Things were going well except for the long-term employees. They seemed to be fearful about the rapid changes and the direction sales was heading. Four senior sales people came to Haynes's office to protest the pace at which new reports were generated. They pointed out how one idea hadn't worked at all and that the effort lost developing it had been equivalent to five employees for six weeks. The failure had set everyone behind because several customers were interested, and then Information Reports was unable to deliver. Haynes admitted that she had made a serious mistake in judgment in accepting the design team's recommendation.

The older workers preferred the slower method of passing a new idea from one department to the next and getting top management approval before starting. This gave the sales people a chance to learn about the data content of a new report and to update the catalogs they used to sell reports to customers. "We don't want to stifle change," said one of the senior workers. "We just want to do a good job with the products we have. We don't see why you should force change through these design teams, and we would like to see them disbanded."

Haynes wasn't sure what to do. She believed the product design teams gave Information Reports a fast response that would meet customer needs faster than major competitors such as D&B. She also felt the design team success would give her a good shot at promotion to the position of marketing vice president, which would be open with the retirement of her boss next year. If the established workers were unhappy, however, her promotion was not ensured. If she disbanded the design teams, new product innovation would slow down, and the younger sales people would be frustrated and would consider leaving the company. Haynes saw that resentment was growing between the two groups, and she wondered what could be done that would satisfy everyone. To make matters worse, at a recent executive committee meeting, the president stressed the importance of creating a corporate culture in which all employees felt involved and committed to the organization and satisfied with their work.

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QUESTIONS

1. What is the problem in this case? How could Hynes get the older workers to go along with design team development of new products?
2. Is Hynes using the right techniques for developing new products? For improving change? If so, why are the older workers unhappy? How can she satisfy both groups of workers?

試料目	試題(大)(小)	題別	科目	考試時間	星期(日) 月 日 上午 下午 第一
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1. 很多公司為了精簡人力，降低成本，不是鼓勵員工提早退休，就是接受資遣，但同時又替某些員工大幅增加待遇，有那些經濟學理論可以解釋公司這種行為？ (25%)

2. 如果“資訊不對稱”(即公司比顧客了解產品的品質)是造成公司大筆投資於廣告費用的原因，那種公司比較可能多做廣告，好公司還是壞公司？為什麼？ (25%)

以下兩道題目請依據下列短文作答

3. 請以二百字以內中文敘述本文之大意。 (25%)
4. 當一個公司瀕臨倒閉，可能產生那些與倒閉相關的成本和負面影響？倒閉成本的高低與產業內競爭的型態可能有那些關係？ (25%)

考試科目	經濟學	所別	政治學研究所	考試時間	120分鐘
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The flexible tiger

Taiwan has largely escaped the mauling many Asian economies have suffered. One reason may be that its companies are allowed to fail

ASIA'S string of financial crises has exposed the fact that the fast growth of many companies has depended critically on easy money. The ready availability of bank loans, often extended at government behest and at attractive interest rates, allowed Indonesia's nascent conglomerates and South Korea's chaebol to pursue market share and expand into new fields without worrying about rates of return. In Thailand and the Philippines, fixed exchange rates made foreign-currency loans look cheap. But when crisis came and the easy money dried up, debt-laden companies were quickly mired in financial trouble. Their restructuring will entail redundancies and plant closures, which will make the economic situation all the more serious.

One of Asia's so-called Tigers, however, has fared far better than the rest. While Korea and South-East Asia are struggling, Taiwan has so far escaped with a small currency devaluation and a relatively modest decline in share prices. Economic growth remains strong. Working out why Taiwan has outperformed its neighbours will keep economists busy for years to come. A light foreign-debt burden is one likely explanation. Better banking regulation is another. A third probable cause of Taiwan's success is more controversial: by having a more flexible economy than some other Asian countries, Taiwan may have been better positioned to withstand the storms.

Exactly what does "flexibility" mean? A new paper*, by Bee Yan Aw and Mark J. Roberts of Pennsylvania State University and Xiaomin Chen of the World Bank, offers a partial answer. One secret of success, they suggest, is that Taiwan makes it easy for new companies to get a start—and for old ones to fail.

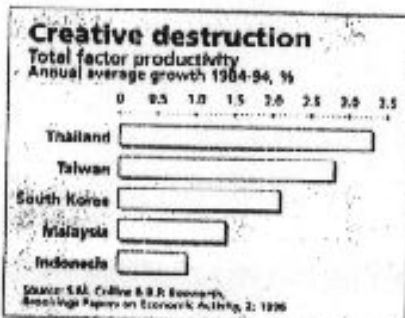
Start-up companies, they find, have a key role in the most unlikely industries. Chemical manufacturing, for example, is widely regarded as a business where the need for huge capital spending gives an advantage to big, well-established companies. And yet in 1991, 40% of Taiwan's chemical output came from firms that did not exist in 1986. One-third of the value of Taiwan's plastics production and half its output of fabricated metal

ECONOMICS FOCUS

products were also attributable to firms less than five years old.

The newcomers, it seems, establish their place in the market by forcing old-timers out of business. Firms that had accounted for 58% of Taiwan's chemical production in 1981 had left the business by 1991. In other sectors—including ones which were expanding rapidly overall—the carnage was even worse. Four out of five firms that manufactured clothing, metal products, textiles and plastics in 1981 either closed or changed lines of business over the next decade.

This creative destruction spurs in-



cumbents to stay trim and helps spread new skills quickly. As the successful entrants tend to be more efficient than the firms that die, they boost productivity across the economy. Between 1986 and 1991, total factor productivity—the increase in output due to more efficient use of inputs such as labour and capital—in Taiwan's electrical-machinery industry rose 23.6%. Over a third of that, the researchers estimate, came from new firms pushing out less efficient ones. In the chemicals industry, where productivity growth was slower, a whopping three-fifths of the gain was due to the entry of highly efficient firms and the exit of stodgier ones.

These impressive figures probably understate the impact of Taiwan's sink-or-swim attitude toward business. Improvements in existing firms' efficiency, which account for most of the rest of Taiwanese productivity growth, are in large part spurred by potential competition from new entrants and the fear of bankruptcy. The ease with which companies are born and fail is clearly one reason why Tai-

wan's total factor productivity has improved faster than that of all other Asian countries since 1960. From 1984-94 only Thailand had a better record (see chart).

How has Taiwan succeeded in stimulating so much new business formation? In earlier decades, the Taiwanese government used directed lending and import protection in order to foster domestic manufacturing. But as these policies have receded in recent years, lowered trade barriers have forced manufacturers to face vigorous competition domestically and to seek markets overseas. This is directly related to productivity growth: the authors find that firms that export tend to have higher productivity than those that do not.

The benefits of bankruptcy

Taiwan's policies differ from those of some other Asian countries in another important way. The Taiwanese legal system puts relatively few obstacles in the way of bankruptcy. This encourages investors, lenders, workers and managers to act prudently, because they know that the consequences of bad decisions may be fatal for the firm. It has also made entrepreneurs accustomed to starting again after their ventures collapse. Failure is no sin.

Manufacturers appear to shape their strategies in response to these pressures. In particular, many Taiwanese companies deliberately seek to minimise irretrievable expenses or, as economists call them, "sunk costs". Firms tend to cluster in less capital-intensive industries and to subcontract the production of many of their components. That means they do not need to spend much on fixed assets such as machinery, which, in any case, can easily be sold off to rivals if a firm goes out of business. Many Taiwanese companies have also chosen to be suppliers for other firms, often in America or Japan, rather than developing brands of their own. This reduces the need for expensive advertising and research.

Taiwan is by no means immune from the broader forces that have afflicted all of Asia. Its stockmarket has fallen 7% since October, and its currency, the New Taiwan dollar, is off 12.5% against the American dollar. The even larger exchange-rate devaluations in countries such as South Korea and Malaysia will undoubtedly put many Taiwanese firms under pressure. But its history of allowing troubled businesses to die and new ones to spring up should make it easier for Taiwan to adjust to turbulent times.

*Firm-level evidence on productivity differentials, turnover and exports in Taiwanese manufacturing". NBER Working Paper 6215, October 1997.

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僅能使用簡單型計算機

1. Suppose you want to compare consumer ratings of six different treatments. The objective of this experiment is to determine whether differences exist in the rating levels of the six treatments. Use the Friedman test to determine whether the following data present sufficient evidence to indicate differences in the rating levels of the six treatments. Test using $\alpha = 0.05$. (15%)

Subject	Treatment					
	1	2	3	4	5	6
1	5	7	6	4	8	5
2	6	6	7	4	10	4
3	8	9	9	6	10	7
4	4	7	5	3	6	5

2. A production process comprises three machines A, B, and C, with reliabilities of 0.99, 0.98, and 0.95, respectively. In order for the process to function properly, all three machines must function. Engineers are weighting two alternative designs for increasing the reliability of this process. Plan 1 involves adding an identical backup process, and plan 2 involves providing a backup for each machine. In either case, three machines (A, B, and C) would be used with reliabilities equal to the original three. Which plan will provide the higher reliability? (20%)
3. What is a balanced incomplete block design? Explain what it meant by the words "balanced" and "incomplete". How can this design be randomized? (15%)
4. Dynasty Restaurant is contemplating opening a new restaurant on Mu-Sin Road. It has three different alternatives, each with a different seating capacity. Dynasty estimates that the average number of customers per hour will be 80, 100, or 120. The payoff table for the three alternatives is as follows:

	Average Number of Customers Per Hour		
	80	100	120
Alternative A	\$10,000	\$15,000	\$14,000
Alternative B	\$8,000	\$18,000	\$12,000
Alternative C	\$6,000	\$16,000	\$21,000

Dynasty estimates the probability of 80 customers per hour is the same as the

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probability of 120 customers per hour and twice as much as the probability of 100 customers per hour. (25%)

- (a) Using the expected monetary value criterion what is the optimal decision?
- (b) Dynasty must decide whether or not to purchase a marketing survey from Ji-Nan Marketing Corporation for \$1,000. The results of the survey are "favorable" or "unfavorable". Should Dynasty buy the survey? The conditional probabilities are:
- $P(\text{favorable} \mid 80 \text{ customers per hour}) = 0.2$
- $P(\text{favorable} \mid 100 \text{ customers per hour}) = 0.5$
- $P(\text{favorable} \mid 120 \text{ customers per hour}) = 0.9$

5. A service station manager wants to estimate the mean summer weekly demand for three types of gasoline, leaded, unleaded, and super unleaded. Perform an ANOVA analysis based on the following data (in thousands of gallons). (use $\alpha = 0.1$) (25%)

Gasoline	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
leaded	2.4	2.6	2.7	2.8	3.0	2.6	2.7	2.4
unleaded,	18.2	19.7	21.3	22.4	21.5	19.7	18.0	18.8
super unleaded	4.3	4.6	4.7	5.5	5.0	4.8	4.6	5.0

$$\chi^2_{0.05,4} = 9.488 \quad \chi^2_{0.05,5} = 11.071 \quad \chi^2_{0.05,6} = 12.592$$

$$F_{0.1,2,14} = 2.73 \quad F_{0.1,2,21} = 2.57 \quad F_{0.1,7,14} = 2.19 \quad F_{0.1,2,12} = 2.81$$

$$t_{0.05,12} = 1.782, \quad t_{0.1,12} = 1.356$$