

### 本考科禁用計算機

Alberto-Culver 公司以 V05 頭髮護理產品聞名，也也在全球各地生產銷售許多其他個人護理用品、特殊用品雜貨和家庭用品。Carol Lavin Bernick 和她的丈夫接管由她父母創立的公司時，公司正需要重新整頓。業績平平，利潤下滑，而且由於新進強大的零售商（如沃爾瑪）進入市場，使得市場競爭愈來愈激烈，Bernick 認為改善公司績效的最好方式就是改變公司文化。

如同其他公司一樣，多數的員工並不了解公司如何賺錢或者他們的工作會如何影響業績和利潤。為改善此點，公司提名 70 位成長發展領導人 (growth development leaders, GDL) 並賦與改變文化的責任，每一位 GDL 約指導 12 個人。身為指導員，GDL 協助員工了解其工作如何與達成公司目標相關，參與績效考核，確認員工了解並善用公司給予的家庭福利。GDL 每 6 星期左右與 CEO 開會一次，將員工的問題予以討論並和高階管理團體開發解決方案。在 GDL 成立 4 年後，公司設立獎項來表揚最成功的 GDL；隔年，另外兩項提議開始實施，發佈公司正式的文化價值聲明和新式員工績效考核方法開發成功。

為衡量改變是否有效，Bernick 檢視業績和稅前盈餘的效果，公司也進行年度員工調查來評估改變公司文化的發展。Carol Lavin Bernick 說：「我非常相信我們必須要改變你在評估的事情。」她的分析說服了她自己，過去幾年來所作的文化變革對公司當時的業績的大量提升和稅前盈餘的增加有極大的貢獻。

請就人力資本的觀點來論述企業文化對組織學習與組織動態能力之間的關係 (50%)。

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Vitro is a Mexican glass manufacturer located in Monterrey, Mexico. Vitro's product line concentrates on drinkware but includes dozens of products, from automobile windshields to washing machines. Vitro has a long history of successful joint ventures and is globally-oriented.

Corning, Inc., is most famous for its oven-ready glass wear; however, Corning has diversified into fiberoptics, environmental products, and laboratory services. Like Vitro, Corning has a long history of successful joint ventures and globalization. Vitro and Corning share similar corporate cultures and customer-oriented philosophies.

After realizing such similarities and looking to capitalize on NAFTA by accessing the Mexican market, Corning, Inc., entered into a joint venture with Vitro in the fall of 1992. The similarities in history, philosophy, culture, goals, and objectives of both companies would lead to the logical conclusion that this alliance should be an instant success. However, as Francisco Chavez, an analyst with Smith Barney Shearson in New York, said, "The cultures did not match... it was a marriage made in hell." As history reveals, Corning and Vitro dissolved the joint venture 25 months after the agreement. Both companies still have an interest in maintaining the relationship and continue to distribute each other's products.

A further look at the strategic history of Corning and the joint venture between Corning and Vitro will lead to a better understanding of the difficulties inherent in creating and maintaining foreign alliances. A more in-depth investigation also will reveal the impact of culture on business transactions.

### The Strategic History of Corning

Corning, Inc., has been an innovative leader in foreign alliances for over 73 years. One of the company's first successes was an alliance with St. Gobain, a French glass maker, to produce Pyrex cookware in Europe during the 1920s. Corning has formed approximately 50 ventures over the years. Only 9 have failed, which is a phenomenal number considering one recent study found that over one-half of foreign and national alliances do not succeed. Over the last 5 years, Corning's sales from joint ventures were over \$3 billion, which contributed more than \$500 million to its net income.

Corning enters into joint ventures for two primary reasons, which are best explained through examples of its past ventures. The first is to gain access to markets that it cannot penetrate quickly enough to obtain a competitive advantage. Corning currently has multiple ventures that exemplify market penetration. Samsung-Corning is an alliance in which Corning provided its distinctive competency of television tube production while Samsung provided expansion into the television market. Corning was able to achieve a strong market share in the Asian market, with sales in excess of \$500 million.

The second reason is to bring its technology to market. For example, the strategic alliance of Corning with Mitsubishi led to the creation of Comtec, Inc. Corning produces the ceramic substrates in automotive catalytic converters. The venture employs coating technology developed by Mitsubishi that extends Corning's business into stationary pollution control. Corning reports that the venture is quite successful.

Corning's CEO, James R. Houghton, summarizes the major criteria for deciding whether an equity venture is likely to succeed as follows:

1. You need a solid business opportunity.
2. The two partners should make comparable contributions to the new enterprise.
3. The new enterprise should have a well-defined scope and no major conflicts with either parent company.
4. The management of each parent firm should have the vision and confidence to support the venture through its inevitable rough spots.
5. An autonomous operating team should be formed.
6. Responsibility cannot be delegated.

Houghton also emphasizes that the most important dimension of a successful joint venture is trust between the partners.

Corning's track record indicates that it has been able to establish and run a large number of joint ventures successfully. What went wrong with the recent Vitro venture? Vitro and Corning seemed to have similar operating procedures, and Vitro's product line complements Corning's consumer business. Therefore, how could a seemingly

perfect alliance fail so miserably? Probing deeper into the Corning-Vitro joint venture reveals the important role that culture may play in international alliances.

**Background on the Corning-Vitro Joint Venture**

The Corning-Vitro venture seemed to be ideal. However, a strong Mexican peso, increased overseas competition, and strong cultural differences spelled trouble for the alliance. The economic problems are understandable, but the cultural differences should have been given more attention before the alliance was entered.

Although both companies appeared so similar on the surface, they really were quite different. Cultural clashes erupted from the very beginning of the venture because of differing approaches to work. One example was in the marketing area. Vitro's sales approach was less aggressive than the Americans at Corning thought necessary; the slower, deliberate approach to sales in Mexico was a result of the previously highly controlled economy. Corning's sales approach, on the other hand, was more quick-action oriented and aggressive, which had developed from decades of competition.

Once in the venture, the Mexicans thought the Americans were too forward, and the Americans believed that their Mexican partners wasted time being too polite. The Americans perceived the Mexican characteristics to include an unwillingness to acknowledge problems and faults. With respect to speed, the Mexicans thought Corning moved too quickly, while the Americans thought Vitro moved too slowly.

Another obvious cultural difference was the conflicting styles and time allotment for decision-making. Vitro is bureaucratic and hierarchical, and loyalty is to family members and patrons in the ranks of the company. Decisions often are left either to a member of the controlling family or to top executives, while middle-level managers seldom are asked to contribute their opinions. In addition, make important decisions. Mr. Loose (Corning's chief executive of the joint venture) observed, "If we were looking at a distribution decision, or a customer decision, we would have a group of people in a room, they would do an assessment, figure alternatives and make a decision, and I as chief executive would never know about it. My experience on the Mexican side is that someone in the organization would have a solution in mind, but then the decision had to be kicked up a few levels."

These examples indicate that culture was an especially sensitive issue between Corning and Vitro, and the alliance was not able to overcome these problems. Corning felt that the cross-cultural differences were depriving both companies of the flexibility to take the fast management action that is necessary in the dynamic business climate of both countries. Vitro basically agreed. Corning gave Vitro back its \$130 million investment, and the joint venture was

called off. The companies still recognize the opportunity to continue business with each other, however. They have changed their relationship into a mutual distribution of each other's products.

**The Aftermath of the Breakup**

Vitro and Corning each responded publicly to the dissolution of their alliance, and each indicated the strong differences in culture. Corning wanted to discuss the problems and learn from them, while Vitro was hesitant to criticize anyone, especially a visible U.S. partner like Corning. The Mexicans preferred to concentrate on continuation of the marketing arrangement between the companies. Houghton, the Corning CEO, openly spoke of the alliance as one that stopped making sense. He stated that cross-cultural differences inhibited the potential of the alliance. Corning's chief executive of the venture, Mr. Loose, openly acknowledged the different decision-making styles between the two cultures. Vitro executives were defensive and disappointed that Mr. Loose had expressed his views so frankly in public. "It is unfortunate that he made those comments," said an anonymous Vitro executive. The president of Vitro, Eduardo Martens, flatly denied that the cultural differences were any greater than in other alliances. In an interview with the Harvard Business Review, however, he admitted, "Business in Mexico is done on a consensus basis, very genteel and sometimes slow by U.S. standards."

Corning feels they learned a lesson in the failed Vitro alliance; both foreign and domestic alliances require additional skills and more management time. CEO Houghton says that alliances carry a lot of risk and misunderstandings, but they can be significantly beneficial to the operations of a company if they are done carefully and selectively. Corning continues to analyze why the cultural differences with Vitro were too strong to overcome.

1. Identify and discuss Corning's strategic disposition toward a joint venture with Vitro. (20%)
2. Cultural clashes among partners in joint ventures are not a new issue. Discuss why an MNC, and specifically Corning, would be interested in fully understanding the culture of a potential partner before deciding on an alliance. (20%)

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### 一、解釋名詞 (每題 6 分，共 30 分)

1. 虛擬團隊(virtual team)
2. 組織公民行爲(organizational citizenship behavior)
3. 隱性知識(tacit knowledge)
4. 平衡計分卡(balanced score card)
5. 領導者-部屬交換理論(leader-member exchange theory)

### 二、問答題

1. 企業是一個開放系統，受到外部環境(external environment)的影響。請以台商赴大陸投資為例，說明要考慮哪些外部環境因素？(15 分)
2. 本土化(localization)是國際企業的重要議題，請以在台美商為例，說明美商企業可以採取哪些本土化的作法？(15 分)
3. 請說明企業負責人(或高階主管)可透過哪些方式來塑造組織文化(organization culture)？(15 分)
4. 企業進行人力精簡(down sizing)，若要裁退員工，在執行過程中，有哪些重要的注意事項？(10 分)
5. 請依據期望理論(expectancy theory)、目標設定理論(goal setting theory)、及工作特性模式(job characteristics model)，分別舉例說明主管如何降低員工的缺勤率？(15 分)

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### 經濟學試題

一、單一選擇題：佔分八十分，每題 4 分。

1. 於去年八月下旬，某颶風橫掃台灣，致使蔬菜價格暴漲，連帶地使豆芽菜也由原來的每台斤 10 元漲為 20 元，而台北農產運銷公司每日豆芽菜交易量卻由 8 噸增加為 14 噸。請問：這可以算出什麼彈性？彈性值是多少？(A)供給彈性值 0.82。(B)供給彈性值 0.60。(C)供給彈性值 0.75。(D)需求彈性值 0.55。(E)需求彈性值 0.33。
2. 下列敘述何者正確？(A)利率愈大，則彈性愈小。(B)時間越久，供給彈性愈大。(C)時間越久，需求彈性愈大。(D)利率愈小，則彈性愈小。(E)利率大小與彈性大小無關。
3. 若日立電視機單獨降低價格，由 15,000 元降為 10,000 元，而同時每月銷售量由一萬台增加為 2 萬台。問其需求彈性為何？(A)0.60。(B)0.50。(C)2.00。(D)1.50。(E)1.67。
4. 某君常常抱怨說：隨著醫生的收入實在太好了，以致於無法出國旅遊。最能解釋上述論述的經濟名詞是：(A)規模經濟。(B)邊際效用。(C)機會成本。(D)比較利益。(E)正常利潤。
5. 某乙年過三十而為娶，最近終於被某考慮娶了小姐結婚。他仍然猶豫不決，因為丁小姐雖然很可愛，他仍擔心還會再遇到一個更可愛的小姐。此時，最能解釋上述論述的經濟名詞又是：(A)規模經濟。(B)邊際報酬。(C)機會成本。(D)比較利益。(E)正常利潤。
6. 下列敘述何者正確？(A)既然我已經花了錢買了經濟學教科書，我就非得把它看完不可。(B)某公司規定：自己擁有房子的員工不能領房屋津貼，因為他不必付房租。(C)私立學校學費越來越貴，我們應該多興辦公立學校，以造福社會。(D)某甲每月在「大樂樂」上損失二千元，仍然樂此不疲。假設現在政府有效禁止大樂樂，則某甲不是因而賺了二千元，也不是因而賠了二千元？而是總效用會因此少一點。(E)生產同一產量，任何規模的短期平均成本，一定低於長期平均成本。
7. 廠商若將同一產品在國內與國際市場上銷售，則：(A)這就表示該企業面對兩個市場了。(B)若是兩者的需求彈性相同，則可以採用差別定價。(C)若是兩市場的消費者可以互相轉售，則可以採用差別定價。(D)差別定價的利潤必然一定會高於單一定價。(E)以上皆是。
8. 期末考在十天後就要舉行了，李天才這學期修了四門課，其學分數分別為國文 4 學分，英文 4 學分，政治學 2 學分，中國歷史 2 學分。李天才想要使他的平均分數達到最大(平均分

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(8)

數的算法是各科考試分數與學分數乘積的總合除以總學分數。他曉得他在每科目上多準備一天，該科的分數會增加多少，但卻不知道該如何分配時間以準備這四科的考試。他聽說學經濟學的人最精於計算了，乃來教於他。請問他該如何用何種經濟觀念替他解答此一問題：(A)規模經濟。(B)邊際產量。(C)機會成本。(D)比較利益。(E)正常利潤。

9. 某國家 2005 年國民所得帳資料如下(單位：新台幣十億元)：進口(Xd)為 801；出口(Mf)為 783；受雇人員工資(不包含國外部分)為 699；企業與財產所得(不包含國外部分)為 449；民間消費支出為 768；政府消費支出為 237；要素在國外所得淨額為 -2(其中受雇人員國外報酬淨額為 +3，企業與財產國外所得淨額為 -5)；國內資本形成毛額為 504；國內資本形成淨額為 384。則可計算出：(A) GDP=1538。(B) GDP=1527。(C) GNP=1523。(D) GNP=1803。(E) GNP=2025。

10. 同上題，則可計算出：(A) NNP=1527。(B) NNP=1525。(C) NI=1523。(D) NI=1405。(E) NI=1146。

11. 你在享受森林浴之餘，在路邊發現一塊相貌奇特的小木頭，帶回家把玩。你的一位雕刻家朋友看到後，以二百元向你買走。他在上面順勢刻了一個大頭，以二千元賣給一家藝廊。在藝廊展出中，這個木頭雕刻被一位富翁看上了，結果以二萬元成交，最後被擺在富翁的豪華書架上。若干年後，富翁撒手西歸，木頭雕刻輾轉流落到中華商場古舊店，並以二十萬元拍賣給一位富婆。請問：該年的 GNP 增加多少？(A) 1800 元。(B) 2 萬元。(C) 18 萬元。(D) 20 萬元。(E) 18000 元。

12. 假設某一小國的國民所得  $Y=C+I$ ，消費量  $C=50+0.75Y$ ，投資額  $I=40$ ，請試著計算均衡國民所得  $Y$  為？(A) 360。(B) 200。(C) 180。(D) 40。(E) 250。

13. 若上一題中的投資額  $I$  由 40 增至 50 時，請問均衡國民所得  $Y$  會增加多少？(A) 360。(B) 200。(C) 180。(D) 40。(E) 250。

14. 繼續上一題，此時的投資乘數值為多少？(A) 27。(B) 20。(C) 18。(D) 10。(E) 4。

15. 假設有一包含政府部門的簡單凱恩斯模型如下：為

$Y=C+I+G$ ； $Y=C+S+T$ ；其中  $C=50+0.75(Y-T)$ ； $I=100$ ； $G=60$ ； $T=60$ ；則吾人可計算出均衡可支配所得  $(Y-T)$  為：(A) 150。(B) 400。(C) 600。(D) 800。(E) 360。

16. 下列敘述何者正確：(A) 王小姐原來在某公司上班，結婚之後，為了全心料理家務而辭掉工作。則在他辭職之後，台灣地區的失業率會下跌。(B) 王小姐原來在某公司上班，結婚之

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(16)

後，為了全心料理家務而辭掉工作。他辭職之後，則在他辭職之後，台灣地區的失業率不變。(C)若把義務軍人算為勞動力的就業中，則在其他條件不變的假設之下，台灣的失業率會上升。(D)若台電公司招考一百名業務員，今有一萬名報考，這即表示台灣地區的失業的情形一定十分嚴重。(E)若中油公司要招考一百名業務員，今有一萬名報考，此並無法判定台灣地區失業的情形非常嚴重。

17. 假定 A 國以一單位的生產要素能生產 10 單位的小麥或 20 單位的布，而 B 國能生產 5 單位的小麥或 12 單位的布，請問：若兩國要進行貿易，則 A 國宜生產什麼？(A)全部生產小麥。(B)全部生產布。(C)一半生產小麥，一半生產布。(D)僅生產一半數量的小麥。(E)以上皆非。

18. 下列敘述何者正確：(A)出口補貼可以增加出口，而出口增加即可帶動國民所得增加，故出口補貼愈多愈好。(B)出口擴張可帶動經濟成長，因此增加出口為必然地經濟成長的途徑。(C)進口關稅的課徵會使進口品的國內售價增加，減少該國的價格的上升，因而一定會造成經濟成長的損失。(D)出口是賺外國人的錢，進口是賺外國人賺我們的錢，因此我們應鼓勵出口，限制進口。(E)以上皆非。

19. 台灣地區的國家經濟建設計畫，若以大量發行公債來因應政府公共支出，這會對於台灣的國際收支經常帳盈餘和匯率有何影響？(A)國際收支經常帳盈餘增加和匯率升值。(B)國際收支經常帳盈餘增加和匯率貶值。(C)國際收支經常帳盈餘減少和匯率升值。(D)國際收支經常帳盈餘減少和匯率貶值。(E)不一定。

20. 假設台灣政府軍購支出增加 500 億元，且原先準備全部用稅收融通，現在決定改以發行公債融通，請問此舉對產出之影響為何？(A)發行公債的當期會使產出上升。(B)發行公債的當期會使產出下降。(C)公債到期後會使產出上升。(D)公債到期後會使產出不變。(E)以上皆非。

二、問答題：一題，佔分二十分

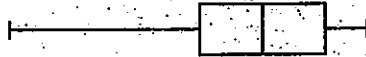
試引用經濟學理，評述以下的敘述。

- (1)若立法院為討好有錢人，而降低所得稅累進稅率，將不利於台灣經濟景氣循環的安定。
- (2)花蓮人都很想儲蓄，但結果可能反而使得儲蓄減少。
- (3)當經濟業已萎縮之時，應力求提升有效需求。
- (4)要有效提高台灣的投資誘因，須確保提高經濟成長率方可。(試題完)

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I. 選擇題每題 4 分，共計 40 分，不倒扣，請依序作答註明題號，將答案對準題號。  
(若題目需要查臨界值，請在題目最後一頁查詢，題目共五頁，請小心作答。)

1. A dataset is summarized as a boxplot below:



Which of the following statements about the distribution of the dataset is correct?

- (A) The distribution is left skewed and the mean is larger than the median.  
(B) The distribution is right skewed and the mean is smaller than the median.  
(C) The distribution is left skewed and the mean is smaller than the median.  
(D) The distribution is right skewed and the mean is larger than the median.
2. A demographic census collects data on the resident population in Taiwan, by age and region. What percentage of seniors are Eastern residents among all seniors?

Region	% of population	% of seniors in the region
North	0.40	0.15
Middle	0.25	0.12
South	0.30	0.12
East	0.05	0.21

- (A) 0.21 (B) 0.1365 (C) 0.077 (D) 0.6

3. Medical scientists claim that a new vaccine is 80% effective against a disease. Assuming that the claim is accurate, determine the probability that, out of 10,000 cases, the vaccine will be effective between 8,000 and 8,100 cases, inclusive:  
(A) 0.499 (B) 0.8 (C) 0.994 (D) unable to determine

Forty-one people in labor force are randomly selected. Their mean age is 36.4 and population standard deviation of the ages is 12.1 years. Answer question 4 and 5.

4. A 95% confidence interval for  $\mu$  will be:

- (A)  $36.4 \pm Z_{0.025} \times \frac{12.1}{\sqrt{41}}$  (B)  $36.4 \pm Z_{0.05} \times \frac{12.1}{\sqrt{41}}$  (C)  $36.4 \pm t_{0.025} \times \frac{12.1}{\sqrt{41}}$   
(D)  $36.4 \pm t_{0.05} \times \frac{12.1}{\sqrt{41}}$

5. If we require that the margin of error be within  $\pm 0.5$  years when estimating the 95% confident interval for  $\mu$ , the minimum sample size should be larger than:  
(A) 1,585 (B) 1,661 (C) 2,150 (D) 2,250.



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A hardware manufacturer produce bolts of 10mm diameter in factory A. Suppose that an acceptable standard deviation for the bolt diameters is one that is less than 0.09mm. The manufacturer wants to decide whether the diameters of the bolts produced in factory A vary too much by performing a hypothesis test. The manufacturer takes a random sample of 12 bolts and derived a sample standard deviation of 0.047mm. Answer question 6 to question 8.

6. The null and alternative hypothesis for the intended test will be:  
(A)  $H_0: \sigma=0.09; H_1: \sigma \neq 0.09$                       (B)  $H_0: \sigma \geq 0.09; H_1: \sigma < 0.09$   
(C)  $H_0: \sigma \leq 0.09; H_1: \sigma > 0.09$                       (D)  $H_0: \sigma \leq 0.047; H_1: \sigma > 0.047$

7. The value for the testing statistics is around:  
(A) 1    (B) 2    (C) 3    (D) 4.

8. The manufacturer draws another random independent sample of size 10 from factory B and finds the standard deviation about 0.055mm. The manufacturer tries to evaluate whether the two standard deviations for bolts produced in factory A and B are equal. The value for the testing statistics and corresponding distribution should be:  
(A) 0.73 ;  $F_{9,11}$     (B) 0.73 ;  $F_{11,9}$     (C) 0.85 ;  $\chi^2_{19}$     (D) 0.73 ;  $\chi^2_{19}$

9. A dataset is modeled by a simple regression equation as:

Predictor	Coefficient	Standard Error	T	$P( Z  >  T )$	Adjusted $R^2$
Constant	0.9221	0.1454	6.34	0.00	0.233
$X_1$	0.5795	0.0474	12.22	0.00	

Which of the following statements is false?

- (A) A unit change in  $X_1$  will lead to a 0.5795 unit change in Y.  
(B) The proportion of total variance of Y which is explained by  $X_1$  is 23.3%.  
(C) The linear correlation coefficient between Y and  $X_1$  is 0.4827.  
(D) Given a specific  $X_1$ , more error is involved in predicting the mean of all corresponding Ys than in predicting a single Y.
10. Which of the following assumptions is false when conducting an ANOVA?  
(A) The standard deviations of the variable under consideration are known.  
(B) The standard deviations of the variable under consideration are the same for all populations.  
(C) The samples taken from the populations are independent of one another.  
(D) For each population, the variable under consideration is normally distributed.

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### II. Short Questions (16%)

11. (1) What do Type I error, Type II error, and the power of a test error mean? (4%)  
(2) For a fixed sample size, how will Type II error vary when Type I error is decreasing? (2%)  
(3) How to reduce Type I error and Type II error at the same time? (2%)
12. (1) What is Kolmogorov-Smirnov test? (4%)  
(2) Please describe null and alternative hypotheses of a normal distribution for Kolmogorov-Smirnov test. (4%)

### III. Calculation (44%)

13. A bookstore manager wishes to determine if there is a difference in the type of novels selected by male and female customers. A random sample of males and females provides the following data. At  $\alpha = 0.05$ , can it be concluded that the type of novel selected is independent of the gender of the individual? (16%)

	Type of novel		
	<u>Science fiction</u>	<u>Mystery</u>	<u>Romance</u>
Males	482	303	185
Females	291	257	405

- a. State the null and alternative hypotheses for a contingency table test. (4%)  
b. State the decision rule, using a 0.05 level of significance. (4%)  
c. Calculate the test statistic. (4%)  
d. Give your conclusion for this test to determine if the type of car purchased is independent of the city in which the purchasers live. (4%)
14. A company sells three items: swimming pools, spas, and saunas. The survey data, the cell means, the figure of interaction between the ages of the sales people and the products, and ANOVA table are listed as follows. The owner decides to see whether the age of the sales representative and the type of item affect monthly sales. At  $\alpha = 0.05$ , analyze the data shown, using a two-way ANOVA. Sales are given in hundreds of dollars for a randomly selected month, and five salespeople were selected for each group.

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The survey data of the company selling product vs salesperson.

Age of Salesperson	Product		
	Pool	Spa	Sauna
Over 30	56, 23, 52, 28, 35	43, 25, 16, 27, 32	47, 46, 52, 64, 74
30 or under	16, 14, 18, 27, 31	58, 62, 68, 75, 83	15, 14, 22, 16, 27

The cell means

Age \ Product	Pools	Spas	Saunas
Over 30	38.8	28.6	55.4
30 or under	21.2	68.6	18.8

The figure of interaction between the ages of the sales people and the products

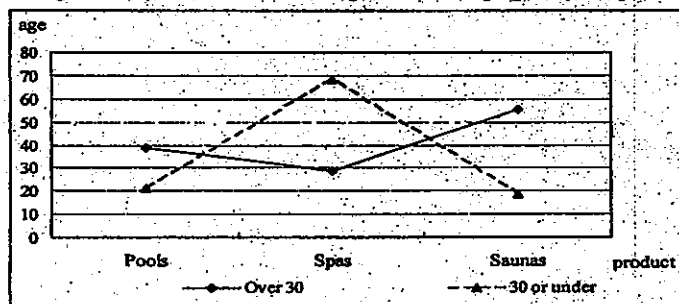


Table of ANOVA  
Analysis of Variance

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F
Age	168.033	(1)	(6)	(10)
Product	1,762.067	(2)	(7)	(11)
Interaction	7,955.267	(3)	(8)	(12)
Within	2,574.000	(4)	(9)	
Total	12,459.367	(5)		

a. Fill out the blanks (1)-(12) in the ANOVA table. (12%)

b. Are the means of the monthly sales of the two age groups equal? (4%)

(Hint: Please state the hypotheses, find the critical value and get the test value, make your decision and summarize the results.)

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c. Is there any difference in the means of the monthly sales of the three product groups? (4%)

(Hint: Please state the hypotheses, find the critical value and get the test value, make your decision and summarize the results.)

d. Does interaction effect exist between the ages of the sales people and the products they sell on the monthly sales? (4%)

(Hint: Please state the hypotheses, find the critical value and get the test value, make your decision and summarize the results.)

e. According to the figure of interaction effect between the ages of the sales people and the products, please describe how to decide whether the interaction exists. (4%)

Some critical values are used to test these hypotheses.

$$F_{0.05}(1, 24) = 4.26, \quad F_{0.05}(24, 1) = 249.1, \quad F_{0.025}(1, 24) = 5.72, \quad F_{0.025}(24, 1) = 997.2$$

$$F_{0.05}(2, 24) = 3.40, \quad F_{0.05}(24, 2) = 19.45, \quad F_{0.025}(2, 24) = 4.32, \quad F_{0.025}(24, 2) = 39.46$$

$$\chi^2_{0.05}(4) = 9.488, \quad \chi^2_{0.05}(5) = 11.071, \quad \chi^2_{0.05}(6) = 12.592, \quad \chi^2_{0.05}(7) = 14.067$$

$$\chi^2_{0.025}(4) = 11.143, \quad \chi^2_{0.025}(5) = 12.833, \quad \chi^2_{0.025}(6) = 14.449, \quad \chi^2_{0.025}(7) = 16.013$$

$$Z_{0.025} = -1.96, \quad Z_{0.05} = -1.645, \quad Z_{0.95} = 1.645, \quad Z_{0.975} = 1.96$$

$$t_{0.025}(40) = -2.021, \quad t_{0.05}(40) = -1.684, \quad t_{0.95}(40) = 1.684, \quad t_{0.975}(40) = 2.021$$

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10% 1. Suppose  $f(x) = \frac{x(1+x)(2+x)\dots(n+x)}{(1-x)(2-x)\dots(n-x)}$ , then to find  $f'(0) = ?$

10% 2. Find  $h'(0)$  if  $h(x) = g(f(x))$ ,  $g(x) = \frac{x+1}{x-1}$ , and  $f(x) = \ln x$ .

10% 3. Determine whether the series  $\sum_{n=1}^{\infty} \left(\frac{n}{n+1}\right)^n$  converges or diverges.

10% 4. Find  $\int \cos(\ln x) dx$ .

10% 5. Find  $\int e^{x+e^x} dx$ .

10% 6. Sketch the graph of  $f(x) = \frac{x^2}{x^2-4}$ .

10% 7. Use the Mean Value Theorem to find  $\lim_{x \rightarrow 4} (\sin \sqrt{x+4} - \sin \sqrt{x})$ .

10% 8. Find  $\lim_{x \rightarrow \infty} \sum_{k=1}^x \frac{1}{k^2}$ .

10% 9. Find  $\lim_{h \rightarrow 0} \frac{1}{h} \left( \frac{1}{\sqrt{1+h}} - 1 \right)$ .

10% 10. Find  $\lim_{x \rightarrow \infty} \frac{\sin x (e^x - 1) (\cos x - 1)}{x^2 \ln(1+x)}$ .

## 本考科禁用計算機

### 一、解釋名詞 (每題 6 分, 共 30 分)

1. 虛擬團隊(virtual team)
2. 組織公民行為(organizational citizenship behavior)
3. 隱性知識(tacit knowledge)
4. 平衡計分卡(balanced score card)
5. 領導者-部屬交換理論(leader-member exchange theory)

### 二、問答題

1. 企業是一個開放系統, 受到外部環境(external environment)的影響。請以台商赴大陸投資為例, 說明要考慮哪些外部環境因素? (15 分)
2. 本土化(localization)是國際企業的重要議題, 請以在台美商為例, 說明美商企業可以採取哪些本土化的作法? (15 分)
3. 請說明企業負責人(或高階主管)可透過哪些方式來塑造組織文化(organization culture)? (15 分)
4. 企業進行人力精簡(downsizing), 若要裁退員工, 在執行過程中, 有哪些重要的注意事項? (10 分)
5. 請依據期望理論(expectancy theory)、目標設定理論(goal setting theory)、及工作特性模式(job characteristics model), 分別舉例說明主管如何降低員工的缺勤率? (15 分)