

I. Multiple Choice Questions: Choose only one correct answer to each question 60%

Part A. Vocabulary 20%

- \_\_\_\_ 1. Taiwan today is a \_\_\_\_\_ democracy with a highly competitive market-oriented economy.  
(A) hulking (B) humpy (C) hurly-burly (D) hole-and-corner
- \_\_\_\_ 2. CD sales have been declining year-on-year with the introduction of CD \_\_\_\_\_ and MP3 files.  
(A) burners (B) collectors (C) composers (D) lovers
- \_\_\_\_ 3. We're always in search of \_\_\_\_\_ in technology development.  
(A) trespass (B) straightness (C) crackdown (D) breakthroughs
- \_\_\_\_ 4. Although youthful, vigorous and prosperous, the Taiwanese have become victims of an education system that seeks to produce \_\_\_\_\_ earners rather than original thinkers.  
(A) wholesome (B) high-wage (C) weary (D) high-handed
- \_\_\_\_ 5. John's \_\_\_\_\_ is bothering him because he lied to his colleagues.  
(A) consensus (B) conscience (C) consciousness (D) consentience
- \_\_\_\_ 6. Mary is very \_\_\_\_\_. She says exactly what she's thinking even if it hurts.  
(A) questionable (B) befuddled (C) bashful (D) blunt
- \_\_\_\_ 7. This gourmet restaurant has a most \_\_\_\_\_ group of patrons, including Catholics, Moslems, Buddhists and Hindus.  
(A) elated (B) elective (C) eclectic (D) elastic
- \_\_\_\_ 8. Investors have become more \_\_\_\_\_ after the recent stock market crash.  
(A) circumspect (B) circumfluent (C) circumjacent (D) circumpolar
- \_\_\_\_ 9. In Chinese, there is no \_\_\_\_\_ at the end of a word to indicate the plural form.  
(A) inflection (B) infliction (C) inflation (D) infraction
- \_\_\_\_ 10. The \_\_\_\_\_ growth in the number of users of the Internet is the most amazing phenomenon in mass communication in recent years.  
(A) explorative (B) exponential (C) expiatory (D) explicable

Part B. Grammar 20%

- \_\_\_\_ 11. The music is becoming more diverse that young people \_\_\_\_\_ complete freedom to access and exchange information.  
(A) having (B) being (C) were (D) have had
- \_\_\_\_ 12. Without direct access to information and resources in WHO (World Health

- Organization), Taiwan \_\_\_\_\_ to fight diseases on its own.  
(A) has had (B) had being (C) has been (D) was
- \_\_\_\_\_ 13. Tina is so candid that when I'm listening to her, I feel \_\_\_\_\_ she is my trust friend.  
(A) even if (B) as if (C) what if (D) that if
- \_\_\_\_\_ 14. Nowadays, the television \_\_\_\_\_ as a babysitter, with nannies particularly.  
(A) was used (B) has using (C) is being used (D) is been used
- \_\_\_\_\_ 15. Susan \_\_\_\_\_ stupid all in her life.  
(A) has been being (B) is been (C) has being (D) was been
- \_\_\_\_\_ 16. The agency sent us several applicants, the most qualified \_\_\_\_\_ was the first one.  
(A) that (B) whose (C) in whom (D) of whom
- \_\_\_\_\_ 17. It has been suggested that each member \_\_\_\_\_ some money for the renovation of the clubhouse.  
(A) contributes (B) has contributed (C) contribute (D) has been contributed
- \_\_\_\_\_ 18. It \_\_\_\_\_ by many that she had married for money.  
(A) is thinking (B) thinks (C) was thought (D) thought
- \_\_\_\_\_ 19. I haven't gone to that exhibit yet, nor do I have any intention \_\_\_\_\_.  
(A) x (B) to (C) in (D) of
- \_\_\_\_\_ 20. \_\_\_\_\_ every effort is being made to improve the financial condition of this company, the term of the loan will be extended.  
(A) As much as (B) As well as (C) Since that (D) Inasmuch as

Part C. Cloze Test 20%

The talented Tom Hanks has played many different movie roles. Terminal is the first movie \_\_\_\_\_ 21 \_\_\_\_\_ he must speak with a European accent. He plays Viktor, a traveler \_\_\_\_\_ 22 \_\_\_\_\_ small country is destroyed by war when he takes a plane to America. Viktor cannot return home, \_\_\_\_\_ 23 \_\_\_\_\_ can he enter the U.S. Then he falls in love with a pretty flight attendant and \_\_\_\_\_ 24 \_\_\_\_\_ plan an escape!

- \_\_\_\_\_ 21. (A) in which (B) where (C) that (D) which  
\_\_\_\_\_ 22. (A) that (B) whom (C) who (D) whose  
\_\_\_\_\_ 23. (A) nor (B) or (C) seldom (D) even  
\_\_\_\_\_ 24. (A) is (B) have (C) must (D) ought

The roommate situation is the first challenge students face. Learning to tolerate a stranger's idiosyncrasies \_\_\_\_\_ 25 \_\_\_\_\_ teach flexibility and the art \_\_\_\_\_ 26 \_\_\_\_\_ compromise. But the learning process is often painful.

\_\_\_25. (A) ought (B) may (C) like (D) as

\_\_\_26. (A) in (B) at (C) of (D) on

Campus officials say that communicating on the Internet or roaming the huge universe of information \_\_\_27\_\_\_ the World Wide Web holds an especially powerful lure for many college students \_\_\_28\_\_\_ it takes them \_\_\_29\_\_\_ a vast new realm of learning and research, usually \_\_\_30\_\_\_ no cost.

\_\_\_27. (A) on (B) in (C) at (D) of

\_\_\_28. (A) which (B) whose (C) what (D) because

\_\_\_29. (A) for (B) into (C) of (D) at

\_\_\_30. (A) of (B) on (C) at (D) in

II. Reading Comprehension: Choose the best one answer to each question  
20%

Learning is an active, constructive process whereby the learner strategically manages the available cognitive resources to create new knowledge by extracting information from the environment and integrating it with information already stored in memory. With the rapid development of computer technology and its application in language instruction, many researchers in the past ten years have engaged in the study of this kind of active and constructive learning process in multimedia environment. Researchers have found that a multimedia learning environment provides the means to facilitate the learning process by manipulating the availability of specific information at a given moment, by controlling the duration of that availability, by varying the way information is presented, and by ensuring the ease with which it can be searched.

\_\_\_31. What is the main idea of the passage?

(A) Multimedia learning environment organizes the information for learners.

(B) Multimedia learning environment differs from computer technology.

(C) Multimedia learning environment provides the availability in the learning process.

(D) Multimedia learning environment controls the duration of learning.

\_\_\_32. Which one of the followings can identify the topic?

(A) Researchers have pointed out the rapid development of learning.

(B) Multimedia environment facilitates the learning process.

(C) The learner extracts information and stores in memory.

(D) Learning is an active and constructive process.

Complimenting is a kind of speech act belonging to the category of expressives.

Complimenting is a positive politeness strategy aiming to praise the addressees for a past or present action. In other words, compliments are prime examples of speech acts that notice and attend to the hearer's interests, wants, and needs. A frequent denotation is Holmes's (1988:446) definition: "A compliment is a polite speech act which explicitly or implicitly attributes credit to someone other than the speaker. Usually, the person addresses for something good which is positively valued by the speaker and hearer." She defines a compliment as a speech act that is accomplished either explicitly or implicitly to express admiration or approval for some good of the addressee. In such a situation, explicit compliments are those whose meaning is understood literally, as in a direct speech act. Similarly, implicit compliments account for indirect speech acts whose meaning can be inferred among participants.

\_\_\_\_ 33. Which one of the followings expresses the topic of this passage?

- (A) The various categories of expressives
- (B) The direct and indirect speech acts
- (C) The positive politeness strategy of the speakers
- (D) The definition and classification of compliments

\_\_\_\_ 34. Which one of the followings is not correct?

- (A) Compliments notice the hearer's interests and needs.
- (B) A compliment expresses admiration for something good of the addressee.
- (C) A compliment is a polite speech which is valued by the speaker.
- (D) Implicit compliments are those whose meaning is understood literally.

Traditionally, sculpture as a genre has not been as powerful of a creative phenomenon in Pacific-rim cultures like China, Japan or Korea. But it has thrived in cultures of the Aegean, like the Cycladic islands and later the mainland of Greece centering on Athens where stone sculpture reached its apogee early, attaining ease and fluidity in the round, as well as becoming a palpable conveyor of motion and emotions. To this day, Europeans walking the streets, let alone going into cathedrals or museums, are profoundly familiar with images of solid forms moving in space.

\_\_\_\_ 35. The passage is about \_\_\_\_.

- (A) Aegean
- (B) space
- (C) sculpture
- (D) genre

After I had been living in Singapore for 18 months, my return to the U.K. was depressing when it came to fish dinners. Having enjoyed my sojourn in Southeast Asia and discovered Asian wet-market culture with the wonderful selection of live seafood and fresh fish including blue-fin tuna, wild sea bass, and coral grouper, going home was a shock. Of course, in the U.K. we have superb cold-water fish such as

halibut, cod, and haddock, but when you buy seafood you'll find yourself gazing in disbelief at the prices and at the sorry-looking half-frozen display of defrosting specimens that an Asian chef would reject immediately.

- \_\_\_\_ 36. Which one of the followings is not listed in the passage?  
(A) geographic region (B) restaurants (C) delicious dishes  
(D) markets
- \_\_\_\_ 37. What might be a good title for this passage?  
(A) Prices of Fish (B) Defrosting Specimens (C) Southeast Asia  
(D) Wet-market Culture

If you are a frequent patron of fast-food restaurant in Taipei, you may have discovered that most stores have added some new dishes to their menus. For the first time since it set up shops in Taiwan 19 years ago, KFC has introduced a pork burger. McDonald has also added a pork burger to its offerings, and Japanese-owned Mos Burger has started to serve a shrimp burger and seafood meals.

All of the changes were adopted to make up for declining sales of chicken and beef following the spread of avian influenza across 10 countries in Asia since mad cow disease discovered on December 23, 2003 in Washington State in the United States. Although the bird flu has appeared in Taiwan located as the weaker strain this year, the government's Council of Agriculture reports that at least affected 371,000 chickens and ducks had been put to death in the end of February. With regard to the mad cow disease, the government stipulated that any beef containers packaged after December 24, 2003 would not be allowed to enter Taiwan.

- \_\_\_\_ 38. Which one of the followings is not correct?  
(A) The avian flu and mad cow disease have caused consumers to promote seafood.  
(B) The bird flu has appeared in Taiwan located as the weaker strain.  
(C) The government stipulated a ban on beef imports.  
(D) Fast-food restaurants set up in Taiwan nineteen years ago.
- \_\_\_\_ 39. The main idea of this passage is that \_\_\_\_\_.  
(A) fast-food restaurants have added new dishes for consumers.  
(B) the spread of avian influenza comes across ten countries in Asia.  
(C) the owners of the fast-food restaurants acknowledge the great impact on the diseases.  
(D) mad cow disease has been discovered in Washington State in the United States.
- \_\_\_\_ 40. It can be inferred from this passage that \_\_\_\_\_.  
(A) fast-food restaurant owners welcome beef imports from mad-cow-

disease-free countries.

- (B) fast-food restaurants have to revise their menus or sources of supply.
- (C) the wave of international epidemics has triggered considerable anxiety among government workers.
- (D) the sales of chicken and beef have been changed to well-cooked rice.

III. Writing an Essay 20%

Topic: Art is engendered in the genuine creativity and inspiring originality. Some say that genius is liberated only when the artist remains deaf to outside noises, deeply fascinated by, and more than satisfied with, the ever-expanding horizons within. What are your viewpoints and expectations about genius?

A. Please explain the following terms:

- (1) Confounding (5%)
- (2) Ecological fallacy (5%)
- (3) Secondary association (5%)
- (4) Birth cohort (5%)

- B. (A) Biological plausibility  
 (B) Effect modifier  
 (C) External validity  
 (D) Internal validity  
 (E) Intervening variable  
 (F) Measurement bias  
 (G) Necessary cause  
 (H) Recall bias  
 (I) Sufficient cause  
 (J) Synergism

The parameters listed above are related to the assessment of causality. For each of the following descriptions, select the corresponding parameter. (20%)

- B1. This alters the nature of a true relationship between an exposure and an outcome
- B2. This is a systematic distortion of study data; an example is weighing the subjects in a study while they are fully dressed.
- B3. This is a multiplicative effect of one exposure variable on another.
- B4. This is present when the study population resembles the larger population from which it was drawn.
- B5. This is present if it is possible to understand a mechanism by which the apparent cause could induce the apparent effect.
- B6. This is a means or the means by which the causal factor leads to the outcome.
- B7. This is required for a disease to occur.
- B8. This is a systematic distortion in retrospective studies; it is eliminated by a prospective design.
- B9. This is the sole requirement for a disease to occur.
- B10. This is present when study results are obtained in an unbiased manner.

C. A study is conducted to determine the effects of drinking Mountain Dew on a teenager's willingness to bungee jump from frightful heights. A total of 500 teenagers are assembled on the basis of bungee-jumping status: 250 are jumpers, and 250 are not. Of the 250 jumpers, 150 report drinking Mountain Dew. Of the 250 nonjumpers, 50 report drinking Mountain Dew. A majority of the nonjumpers report a preference for warm milk. (15%)

- C1. Which of the following statements is true?
- (a) Jumpers and nonjumpers should be matched for beverage consumption
  - (b) The absolute and relative risk of bungee jumping can be determined from this study
  - (c) This is a cohort study
  - (d) This study can be used to calculate an odds ratio
  - (e) Unanticipated outcomes can be assessed in this study

(智西有試是) .

- C2. What is the absolute difference in the risk of jumping?
- (a) It cannot be calculated, because jumping is the dependent variable;
  - (b) It cannot be calculated, because this is a case-control study;
  - (c) it is 3:1
  - (d) It is 100
  - (e) it is 150
- C3. The odds ratio calculated from this study will give the odds of
- (a) drinking among jumpers to drinking among nonjumpers
  - (b) drinking among nonjumpers to drinking among jumpers
  - (c) drinking Mountain Dew to jumping
  - (d) jumping among drinkers to drinking among jumpers
  - (e) nonjumping among drinkers to nondrinking among jumpers
- C4. The odds ratio in this study is
- (a) 0.2
  - (b) 0.6
  - (c) 2.0
  - (d) 5.0
  - (e) 6.0
- C5. The results of this study indicate that
- (a) bungee jumping and beverage choice are associated
  - (b) bungee jumping and beverage choice are causally associated
  - (c) bungee jumping influences a person's choice of beverage
  - (d) the choice of beverage influences a person's tendency to bungee jump
  - (e) There is no association between warm milk and bungee jumping
- D. Consider each of the following scenarios and state whether the variable in question is a confounder. (20%)
- D1. A study of the relationship between contact lens use and the risk of eye ulcers. The crude relative risk is 3.0 and the age-adjusted relative risk is 1.5. Is age a confounder in this study?
- D2. A case-control study of the relationship between cigarette smoking and pancreatic cancer. In this study, coffee drinking is associated with smoking and is a risk factor for pancreatic cancer among both smokers and nonsmokers. Is coffee drinking a confounder in this study?
- D3. A study of the relationship between exercise and heart attacks that is conducted among men who do not smoke. Is gender a confounder in this study?
- D4. A cohort study of the risk of liver cirrhosis among female alcoholics. Incidence rates of cirrhosis among alcoholic women are compared to those among nonalcoholic women. Nonalcoholics are individually matched to alcoholics on month and year of birth. Is age a confounder in this study?



E. Suppose that 100,000 men were screened for prostate cancer for the 1st time. Of these, 4000 men had a positive result on the screening blood test; of those who tested positive, 800 had a biopsy indicating a diagnosis of prostate cancer. Among the remaining 96000 men who screened negative, 100 developed prostate cancer within the following year and were assumed to be false negative to the screen. (20%)

- E1. Set up the two-by-two table for these data.
- E2. What is the prevalence of prostate cancer in this population?
- E3. Calculate and interpret the sensitivity of this screening test.
- E4. Calculate and interpret the specificity of this screening test.
- E5. Calculate and interpret the predictive value positive of this screening test.

F. State the main difference between an age-specific rate and an age-adjusted rate. (5%)

問答申論題(100分，每題20分)

1. 高雄市自來水從去年十一月開始已經改善許多，請論述其淨水流程有何改變？水質又如何改善？
2. 我國每逢乾季即成旱災，逢雨季也氾濫成災，而且幾乎每年都一再重演，試申論國內應如何預防旱災與水災？
3. 去年 SARS 襲捲全球，站在環境衛生的立場，試申論醫院應如何預防院內感染？
4. 何謂病大樓症候群(Sick building syndrome)？其可能的致病因子有哪些？
5. 試述鉛的污染來源，及其對人體健康的影響。

## 本科目得使用電子計算機

## 壹、生物統計概念題，每題 12 分，計 60 分。

- 一、在進行兩組獨立樣本平均數差異比較( $\bar{X}_1 - \bar{X}_2$ )的 t 檢定時，當此兩組樣本所屬群體的變異數相等( $\delta_1^2 = \delta_2^2$ )不成立時，t 檢定的計算公式為何？
- 二、若顯著水準  $\alpha$  定為 .05 時，試以標準常態 Z 分佈圖標示雙尾檢定(two-tailed test)與單尾檢定(one-tailed test)之 Z 的臨界值(critical value)各為多少？
- 三、某研究者欲探討兩變項之間的相關(correlation)，若此兩變項皆為類別名義(nominal)性質，試問應以何統計分析測定相關？又若此兩變項皆為類別次序(ordinal)性質，應以何統計分析測定相關？
- 四、兩組獨立樣本平均數差異比較的 t 檢定，若欲比較的依變項分佈呈嚴重之偏態分佈(skewed distribution)，且 t 檢定結果 P 值  $> .05$  情形。試問對此不顯著差異之結果，你如何解讀？
- 五、某研究者欲從醫學中心過敏免疫風濕內科所收集 100 名痛風患者之年齡，以及日常飲食中普林攝取量(mg/100gm- food)，以線性複迴歸分析(multiple linear regression)預測患者血中尿酸濃度(mg/dl)，而得出此複迴歸分析方程式為  $\hat{Y} = 6.7 + .032 X_1 + .079 X_2$ ，且  $R^2 = .12$ 。其中  $\hat{Y}$  為所要預測的血中尿酸濃度， $X_1$  為患者之年齡， $X_2$  為飲食中普林攝取量。試問此研究者可透過何統計分析以進一步查證此方程式確為最佳預測的複迴歸分析模式(即此方程式 fit 此資料相當不錯)。

(背面有試題)

## 貳、生物統計應用題，每題 20 分，計 40 分。

- 一、以隨機分派方式將被心臟內科主治醫師診斷確定為高血壓病人 60 位分為 A、B 兩組各接受 A、B 兩種降血壓藥物的治療。試根據以下臨床治療所得數據，以合適之統計分析評估此兩種藥物降壓療效之優劣。

$$\bar{X}_A = 150.3 \text{ mmHg} \quad S_A = 16.2 \text{ mmHg} \quad n_A = 30$$

$$\bar{X}_B = 145.3 \text{ mmHg} \quad S_B = 7.1 \text{ mmHg} \quad n_B = 30$$

$$(F_{.95, 29, 29} = 1.85; \quad t_{.975, df=58} = 2.0)$$

- 二、一般外科對於乳癌早期篩檢通常有超音波(echo)與攝影(mammagraphy)兩種。今有 200 位 40 至 60 歲間年齡的婦女，第一階段先接受超音波檢查，以確定陽性與陰性之比例，之後再接受第二階段攝影檢查，同樣確定陽性與陰性的比例。試根據下列 2x2 列聯表(contingency table)所示，以合適之統計分析檢定前後兩階段不同篩檢結果，陽性比例是否有顯著性改變。 $(\chi^2_{.95, df=1} = 3.83)$

超音波檢查

		超音波檢查	
		陽性 (+)	陰性 (-)
攝影檢查	陽性 (+)	10	10
	陰性 (-)	30	150