

**Part I. Question 1 to 10, please choose the answer closest to the underlined word or phrase. One Answer Only. 2 points each.**

1. Leaders of the world's largest economies are close to an agreement to tackle the global financial crisis.  
(A) fight (B) meditate (C) forbid (D) deal with
2. I think people realize the economy seemingly fell off the cliff.  
(A) inclined (B) caught up (C) help up (D) slumped
3. In the future, globalization is going to be increasingly driven quickly to its processes and technologies, and start to march forward.  
(A) directed (B) motivated (C) forced (D) manipulated
4. The home team kicked off the season with an easy win.  
(A) interrupted (B) commenced (C) avoided (D) complicated
5. The use of stem cells is controversial - opponents object on the grounds that it is unethical to destroy embryos in the name of science.  
(A) adversaries (B) allies (C) forerunners (D) associates
6. Slumdog Millionaire is about a Mumbai teen who grew up in the slums, becomes a contestant on the Indian version of "Who Wants To Be A Millionaire?"  
(A) asylum seeker (B) gangster (C) youngster (D) homeless
7. Critical listening is a difficult kind of listening because it requires you to both interpret and evaluate the message.  
(A) understand (B) integrate (C) intrigue (D) compose
8. He is worried about a potential quiz tomorrow.  
(A) possible (B) actual (C) providential (D) surprising
9. These two girls prefer to have intimate conversation one-on-one  
(A) personal (B) secret (C) intelligent (D) discreet
10. His position was contrary to that of the teacher's  
(A) puzzling (B) opposite (C) compatible (D) foreseeable

**Part II. Question 11-15, please choose the answer that best completes the sentence. Question 16-20, please choose the best answer to fill each of the numbered blanks in the passage.**

In many countries, it is considered 11 to appear naked or even half-naked on a public beach. However, some places often have a few 12 beaches that are designated as nudist or "clothing optional" beaches, where uninhibited people can fully 13 themselves to the sun. Other countries, especially those where 14 are hot and attitudes are 15, impose no restrictions at all, so people may sunbathe topless or nude even on the public beaches.

11. (A) inappropriate (B) interesting (C) conservative (D) considerate
12. (A) inclusive (B) executive (C) secluded (D) acceptable
13. (A) demonstrate (B) expose (C) lie down (D) externalize
14. (A) seawater (B) cuisine (C) fashion (D) climates
15. (A) strict (B) sincere (C) liberal (D) general

There are many different forms of potential economic stimulus and they work in different ways. Tax cuts for individuals generally encourage short-term spending. Tax cuts for companies encourage both spending and investment. Expenditures on public works create contracts for firms and provide short- to medium-term 16. Investments in research and development take a longer-term approach 17 the theory 18 in the future (and thus provide jobs) if they have the money to make intelligent investments in their operations

now. Finally, some forms of economic stimulus seek to make investments that will pay off in the long run 19 for everybody. An example is investing in the U.S. energy grid. 20, a one-time outlay could make energy costs for both individuals and businesses less expensive for decades to come.

16. (A) opportunities of employment (B) employment opportunities  
 (C) employing opportunities (D) employment in opportunities
17. (A) under (B) in (C) of (D) on
18. (A) business is going to be thrive (B) which business is going to be thrive  
 (C) that business will thrive (D) business thrives
19. (A) with cheaper consumption (B) in making cheaper consumption  
 (C) by consuming cheaply (D) by making consumption cheaper
20. (A) Theoretic concern (B) Theoretical (C) Being theoretic (D) Theoretically

**Part III. Reading Comprehension. In this part, you will read several passages. Each one is followed by one question or a number of questions. Question 21 – 40, you should choose the ONE best answer to each question. 2 points Each.**

**Question 21-25**

The importance of strength in many sports is undeniable. It is so important that many university and professional teams now hire a specialized coach who only attends to the development of strength in athletes. It is interesting to note that no such specialist is hired to attend to the other components of physical fitness. We have yet to see a cardiovascular coach, a coach who attends to developing fitness of the heart and blood vessels, hired by universities or professional teams. This situation raises the question of the relative importance of each of these two components, strength training and cardiovascular training, to the other. Does the strength coach develop the cardiovascular system by prescribing a program to increase muscle fiber?

It is theoretically possible to design a weight-lifting program in which the resistance is so low and the repetitions so numerous that it provides the cardiovascular benefits of a running program. Therefore, if you view weights as a way to overload muscles, you can imagine a continuum of programs that emphasize cardiovascular benefits on the one extreme and strength on the other. The practical truth of the matter is that most coaches are primarily concerned with pure strength. Therefore, the athlete has to work on the end of the weight-overload continuum that promotes little, if any, cardiovascular benefit. In fact, one study has found that a high-intensity strength program reduced mitochondrial density (density of the cellular structures that produce energy in the muscle fiber) per unit of muscle. The athletes increased muscle mass, so they did not eliminate mitochondria presumably, but the fact remains that the oxidative capacity, the ability to use oxygen in the synthesis of energy, was not promoted. Oxidative capacity would usually improve in programs that stress cardiovascular conditioning. Neither increased blood flow nor increased mitochondrial density (both indicators of oxygen extraction) occur with strength training.

Obviously, there is nothing wrong with training athletes to gain strength, but in most strength programs cardiovascular improvements are not made. Therefore, for athletes, who require both strength and cardiovascular conditioning, both components must be trained independently.

21. What is the main point of the passage?
- (A) College and professional teams do not need specialized coaches.  
 (B) Strength training should be replaced by cardiovascular training.  
 (C) Cardiovascular training is more difficult than strength training.  
 (D) Athletes need both strength and cardiovascular training.

22. Under which of the following conditions can a weight-lifting program provide cardiovascular benefits?
- (A) When the weights are very heavy
  - (B) When the weights are lifted very slowly
  - (C) When lifting a heavy weight overtires the muscles
  - (D) When light weights are lifted a large number of times
23. Why does the author mention running?
- (A) To give an example of the benefits of strength training
  - (B) To demonstrate what a typical weight program includes
  - (C) To give an example of an activity that provides cardiovascular conditioning
  - (D) To demonstrate the importance of oxygen extraction
24. Which of the following is an important direct result of cardiovascular training?
- (A) Improved oxidative capacity
  - (B) Increased muscle fiber
  - (C) Decreased mitochondrial density
  - (D) Increased body weight
25. Which of the following policies would the author be most likely to support?
- (A) Sports teams should increase their strength-training programs.
  - (B) All athletes should be able to choose the kinds of training they prefer.
  - (C) Sports teams should provide improved cardiovascular training.
  - (D) All athletes should avoid strength training in order to avoid injury.

**Question 26-31**

It is in search of adequate food supplies that cetaceans, marine mammals such as whales and dolphins, travel the oceans. They live in a world that is largely hidden from humans. Yet their range is three times as large as ours, since oceans occupy about three-quarters of the Earth's surface. They travel through well-marked ocean zones, **each** with its own characteristic marine life. They glide through the water, periodically rising to the surface to breathe. The sea may be raging but cetaceans are untroubled by the greatest storms; indeed they are more at home in rough than in calm seas.

Indirectly, however, their life is greatly influenced by wind. The eastward rotation of the Earth produces the **prevailing** trade winds, blowing east to west at the equator. These winds drag the surface waters and all they contain in a westerly direction. Warmed by its passage through the tropics, the wind-driven water is deflected against the westward continents, turning southwest in the Southern Hemisphere and northwest in the Northern Hemisphere.

In the Southern Hemisphere, the warm flow of tropical water under the west-going equatorial trade wind produces a genial climate along the eastern shores of Australia, South America, and South Africa. But there is open ocean to the south. Here the current is driven eastward unimpeded by land before the almost incessant westerly gales of this zone. The huge mass of water moves fast, chilled by water from the Antarctic Region, but **laden** with masses of plankton.

This cold, swift current is **split** when it strikes the southwestern extremities of the three southern continents. The northern portion of this water is diverted by the southwest coast of South America to sweep northward toward the equator. Known as the Humboldt Current, this current is rich in plankton on which cetaceans feed. Part of this same cool eastward-flowing current, enriched with water from higher latitudes, is similarly diverted north along the southwest coast of South Africa. This is the Benguela Current, where many cetaceans come to feed.

26. The passage answers which of the following questions?
- (A) What is the main difference between cetaceans and other marine life?

- (B) How far do most cetaceans travel in a year?  
(C) How often do cetaceans need to breathe?  
(D) What winds and ocean currents affect cetaceans?
27. The word **each** in paragraph 1 refers to a  
(A) cetacean (B) surface (C) range (D) zone
28. The word **prevailing** in the passage is closest in meaning to  
(A) arctic (B) blowing (C) dominant (D) energetic
29. The word **laden** in paragraph 3 is closest in meaning to  
(A) balanced (B) filled (C) touched (D) wrapped
30. The word **split** in paragraph 4 is closest in meaning to  
(A) stopped (B) divided (C) opened (D) surrounded
31. What do paragraphs 3 and 4 primarily discuss?  
(A) The water currents in the Southern Hemisphere  
(B) The trade winds in the Southern Hemisphere  
(C) The three continents in the Southern Hemisphere  
(D) The large area of open ocean in the Southern Hemisphere.

**Question 32-36**

Doris Lessing received her Nobel Prize in 2007. Her novel *The Golden Notebook* is considered a feminist classic by some scholars, but notably not by the author herself, who later wrote that its theme of mental breakdowns as a means of healing and freeing one's self from illusions had been overlooked by critics. She also regretted that critics failed to appreciate the exceptional structure of the novel. As she explains in *Walking in the Shade*, Lessing modeled Molly, to an extent, on her good friend Joan Rodker, the daughter of the author and publisher John Rodker.

Lessing does not like the idea of being pigeon-holed as a feminist author. When asked why, she replies:

What the feminists want of me is something they haven't examined because it comes from religion. They want me to bear witness. What they would really like me to say is, 'Ha, sisters, I stand with you side by side in your struggle toward the golden dawn where all those beastly men are no more.' Do they really want people to make oversimplified statements about men and women? In fact, they do. I've come with great regret to this conclusion.

- Doris Lessing, *The New York Times*, 25 July, 1982[8]

32. Doris Lessing is a Nobel Prize winner in  
(A) Feminism. (B) Literature. (C) Sociology. (D) Peace.
33. According to Doris, what feminists want from her is  
(A) exceptional structure. (B) fighting against men.  
(C) creative ideas about men and women. (D) healing power from battles between men and women.
34. Doris Lessing does not particularly like the idea of being **pigeon-holed** as a feminist; pigeon-holed here means  
(A) categorized (B) wholesale (C) viewed (D) completed
35. Which of the following statements is **FALSE**?  
(A) Critics often neglect the theme of mental breakdowns as a self-freeing power.  
(B) She models a heroine on her friend in one of her books.  
(C) Her book *The Golden Book* is particularly considered a feminist one by Lessing.  
(D) Lessing thinks critics understand her work very well.
36. Generally speaking, Lessing's attitude towards being considered a feminist is  
(A) accepting (B) disappointed (C) welcomed (D) patient

**Question 37-40**

In recent years, many Taiwanese have won awards at international film festivals. However, many theater owners don't consider even prize-winning Taiwanese films to have much commercial potential in their home market. Their viewpoint is generally confirmed by the largely empty seats at showings of locally produced movies. The market share for local films is only about two percent, while more than 95 percent of the market is taken by Hollywood blockbusters. The dominance of American-made films in Taiwan has continued for the past ten years, but the government is proposing some solutions. It is hoped that some legal changes and few promotional projects will help Taiwan's struggling film industry.

One proposal is to give individuals or companies a tax deduction for money spent to produce a film. The idea is that the tax deduction would encourage investments in new films. There are also plans to provide financial support not only for film production, but also for marketing.

37. Which of the following could be a title for this passage?

- (A) The international Movie Industry and Taiwanese Films
- (B) Trends in Taiwanese Moviegoing Habits
- (C) Prize-Winning Taiwanese Films
- (D) A Helping Hand for the Taiwanese Film Industry

38. Which of the following statements is true about Taiwanese films in general?

- (A) They have been commercially successful both locally and abroad.
- (B) Most production of local films has been moved to Hollywood.
- (C) They have won many international awards, but little response from local audiences.
- (D) They have found little success anywhere in the world.

39. What does the passage imply is the main reason that Taiwanese films do not have a large local audience?

- (A) Taiwanese audiences dislike prize-winning films, thinking them "arty."
- (B) American films are superior in quality.
- (C) The Taiwanese film industry is not supported well enough financially.
- (D) Ticket prices for local films are too high.

40. How is the government attempting to help the local film industry?

- (A) By limiting the number of foreign films that local theater owners can show.
- (B) By encourage lower ticket prices for local films.
- (C) By establishing schools for training local filmmaking talent.
- (D) By helping to make creating and promoting local films more affordable.

**Part IV. Essay. 20 points.**

**Do you think that technology alienate people from one another? Why or Why not? Please write a well-structured essay in 150 to 200 words discussing your opinions.**

選擇題, 共 50 題, 每題 2 分

4 1. 欲瞭解高雄某地區民衆之口腔衛生狀況, 宜採用下列何種指數?

- 1) def (DMF) 指數 2) PI 指數 3) PMA 指數 4) OHI-S 指數

2. 檢查高雄市某國小四年級學童 600 名, 結果發現罹患齲齒有 240 名, 則其無齲齒盛行率 (prevalence rate) 為多少%?

- 1) 40 2) 60 3) 40 4) 20

$$\frac{600 - 240}{600} = \frac{360}{600} = \frac{36}{60} = \frac{6}{10} = 60\%$$

4 3. 利用高濃度的 APF 局部塗氣時, 將會在牙齒表面上產生

- 1) 氟磷灰石 (fluorapatite) 2) 氟化鈣 (calcium fluoride)  
3) 氟化鈉 (sodium fluoride) 4) 氫氧氟磷灰石 (hydroxyfluorapatite)

4. Russell's index 是為瞭解下列何種情況而設之一種調查紀錄方法?

- 1) 氟斑牙 2) 齒齦炎 3) 齲齒 4) 牙周病

5. 下列那一種醣類, 對口腔中的牙齒危害較大?

- 1) 果糖 2) 蔗糖 3) 麥芽糖 4) 半乳糖

3 6. 下列那一種局部塗氣溶液最不稳定, 需使用時再泡製

- 1) NaF 溶液 2) APF 溶液 3)  $\text{Na}_2\text{PO}_3\text{F}$  溶液 4)  $\text{SnF}_2$  溶液

4 7. 以高雄地區的氣候與環境, 實施飲水氟化之適宜濃度為

- 1) 0.8 ppm 2) 0.7 ppm 3) 0.6 ppm 4) 0.5 ppm

1 8. 何種刷牙的方法, 最難以清潔齒齦溝部分 (gingival sulcus) 之菌斑

- 1) 史迪爾曼法 (Stillman's method) 2) 旋轉法 (Roll method)  
3) 貝氏法 (Bass method) 4) 查特氏法 (Charters method)

2 9. 在食物中之 Ca/P 比例為多少時, 齲齒蝕活性 (caries activity) 最低

- 1) 0.25 2) 0.55 3) 1.0 4) 1.5

3 10. 在設計研究時, 使受檢者, 及檢查者, 都不知道受檢者的分組, 以免人為誤差之方法:

- 1) 先期試驗 (pilot study) 2) 隨機抽樣 (random sampling)  
3) 雙盲試驗 (double blind trial) 4) 篩檢 (screening test)

11. 在某一特定人口, 在特定時間內新發生的病例數, 與母群體之比稱之
- 1) 發生率 (incidence)
  - 2) 盛行率 (prevalence rate)
  - 3) 百分比 (percentage)
  - 4) 罹病率 (morbidity rate)
12. 世界上第一個實施飲水氟化的國家是
- 1) 美國
  - 2) 英國
  - 3) 德國
  - 4) 瑞士
13. 患者因為要矯正牙齒, 而被拔掉的牙齒, 在 DMFT 中記錄為
- 1) D
  - 2) M
  - 3) F
  - 4) 不予記錄
14. 在生物統計資料分類上 "疾病" 與 "性別" 之分類屬於何種變項
- 1) 類別
  - 2) 序位
  - 3) 等距
  - 4) 等比
15. 在生物統計上, 世代研究法 (cohort study) 之优点是
- 1) 較經濟
  - 2) 較省時
  - 3) 較簡單
  - 4) 較準確
16. 目前常用的含氟漱口水, 每天用來漱口最適宜的濃度是
- 1) NaF 0.02%
  - 2) NaF 0.2%
  - 3) NaF 0.5%
  - 4) NaF 2.05%
17. 下列那種維他命與牙齒(發育)之關係較密切?
- 1) vit A
  - 2) vit B<sub>1</sub>
  - 3) vit C
  - 4) vit B<sub>12</sub>
18. 研究疾病發生之因果關係 (cause and effect) 時, 因果相關與非因果相關 (次級相關) 之不同, 主要在於
- 1) 統計數字之樣本大小
  - 2) 統計檢定之強弱
  - 3) 臨床上之判定
  - 4) 因果之間是否有第三因素存在
19. 橫斷研究法 (cross-section study) 又稱為
- 1) 發生率研究法 (incidence study)
  - 2) 盛行率研究法 (prevalence study)
  - 3) 縱向研究法 (longitudinal study)
  - 4) 前瞻性研究法 (prospective study)

20. 葡萄糖經過產酸菌代謝後會產生破壞牙釉質的酸是

- 1) 乳酸 (lactic acid)      2) 乙酸 (acetic acid)  
 3) 丙酸 (propionic acid)    4) 丁酸 (butyric acid)

21. 台灣第一次飲水氟化 (WHO 有記錄) 的年代是西元

- 1) 1962 年      2) 1969 年      3) 1970 年      4) 1972 年

22. 在社區中，為降低齲齒率，以何種方式的使用氟化物最符合經濟效益。

- 1) 含氟漱口水      2) 含氟牙膏      3) 局部塗氟      4) 飲水氟化

23. 在考慮是否使用預防性抗生素時，有後天性心臟瓣膜疾病病史的患者，應歸類為：

- 1) 極高危險群      2) 高危險群  
 3) 中度危險群      4) 低危險群

24. 齲齒填補率 (restorative index RI) 之計算公式為

- 1)  $F/DMF$       2)  $F/DF$       3)  $F/D$       4)  $F/DM$

25. 每半年定期檢查口腔牙齒，其理由為

- 1) 利用寒暑假檢查，不影響功課  
 2) 牙菌斑及牙結石可適時清除  
 3) 25% 齲齒，在半年內可形成  
 4) 填補物需半年檢查一次

26. 高雄市某國中學童 500 名，經口腔檢查發現，完全無齲齒者有 100 名，尚未填補的齲齒 38 顆，已填補完全者 120 顆，拔除者 5 顆，請問該校學童之 DMF 指數及齲齒盛行率分別為

- 1) 2.2 及 80%      2) 1.1 及 20%  
 3) 1.1 及 80%      4) 2.2 及 20%

8

1/5 =

$$\frac{38}{500} = \frac{0.076}{5.00} = \frac{380}{5000}$$

$$\frac{500}{11200}$$



27. 比較牙醫系學生及口衛系學生的 A 型肝炎盛行率 (prevalence rate) 時應該用那一種統計檢定 (statistical study) 來分析資料。

- 1) 卡方檢定 (chi-square analysis)
- 2) 學生 t 檢定 (student's t test)
- 3) 變異數分析 (analysis of variance)
- 4) 配對 t 檢定 (paired t test)

28. 下列相關係數中, 何者表示有較強的相關性?

- 1) -0.6
- 2) +2.5
- 3) -0.85
- 4) +0.9

29. 在生物統計資料分類上, "溫度" 是屬於何種變項?

- 1) 類別
- 2) 序位
- 3) 等距
- 4) 等比

30. 人類第一次飲水氧化的年代是在

- 1) 1944.
- 2) 1945.
- 3) 1948.
- 4) 1949.

31. Oral hygiene index (OHI index) 檢查項目包括

- 1) 牙結石與食物屑
- 2) 色素沈着與煙垢
- 3) 牙菌斑與食物屑
- 4) 牙結石與色素沈着

32. 如果你給一群兒童低糖或高糖食物, 並後測量他們的 def, 則依變項 (dependent variable) 是

- 1) 低糖食物
- 2) def
- 3) 高糖食物
- 4) 兒童數目

33. 以隨机的方法抽取母群體之各個小團體, 而小團體的全部個體均為樣本, 此方法稱為:

- 1) 簡單隨機抽樣 (simple random sampling)
- 2) 等距抽樣 (systematic sampling)
- 3) 分層抽樣 (stratified sampling)
- 4) 集束抽樣 (cluster sampling)

4 34. 在生物統計資料分類上, 重量, 時間, 長度, 之尺度中具有絕對的 0, 應稱為何種變項?

1) 等比, 2) 序位 3) 類別 4) 等距。

3 35. 當食物中之蔗糖量減低時, 致龋齒細菌的細胞外多醣體 (extracellular polysaccharide) 和細胞內多醣體 (intracellular polysaccharide) 之變化為何?

1) 前者減少, 後者不變 2) 前者不變, 後者減少

3) 前者減少, 後者增加 4) 前者增加, 後者減少

4 36. 局部塗氟劑中, 塗完後有可能會使牙齒表面沈澱染色的是

1) NaF 2) APF 3)  $\text{Na}_2\text{PO}_3\text{F}$  4)  $\text{SnF}_2$

3 37. 有一兒童, 一天喝下 0.6 ppm 的氟化水 1.5 公升, 則他攝取了氟量為

1) 6 mg 2) 0.6 mg 3) 0.9 mg 4) 9 mg

3 38. 在常態曲線分配 (normal frequency curve) 中, 若面積為 1, 平均數為 0 時, 試問在 2 標準差 (standard deviation) 所佔的面積為多少 %?

1) 34.13, 2) 68.26, 3) 95.45, 4) 99.73

2 39. 下列何者不是由血液接觸途徑而感染之傳染病?

1) 愛滋病 2) A 型肝炎 3) B 型肝炎 4) C 型肝炎

3 40. 使用飲水氟化, 在牙齒發育的那一階段最有效?

1) 形成期 2) 增生期 3) 鈣化期 4) 萌發期

2 41. 卡方檢定是在探究二個變項是否有關聯性 (association), 這二個變項應屬於何種變項?

- 1) 類別      2) 等距      3) 序位      4) 比例

3 42. 在青少年二個群體的獨立樣本中, 若要比較二者之收縮壓, 應該選擇以下那一種統計檢定來分析資料.

- 1) 卡方檢定 (chi-square test)  
2) 學生 t 檢定 (student t test)  
3) 變異數分析 (analysis of variance)  
4) 配對檢定 (paired t test)

4 43. 算術平均 (mean), 中數 (median) 及眾數 (mode) 三者在此常態分佈 (normal distribution) 中的關係為何?

- 1) mean > median > mode      2) median > mode > mean  
3) mean = mode > median      4) mean = mode = median

4 44. 日常飲水中氟濃度為 0.7 ppm 時, 則 3 歲兒童每天可給氟錠劑

- 1) 0.25 mg      2) 0.5 mg      3) 1.0 mg      4) 不必給

4 45. 對預防層次 (Levels of prevention) 而論, 何種措施不屬於初級預防 (第一、二兩級) 範圍:

- 1) 使用牙線      2) 使用含氟牙膏      3) 潔牙      4) 鑲齒填補

3 46. 經公共衛生所認定之嚴重程度之社區氟中毒指數 (community fluorosis index) 界定範圍為:

- 1) 0.6 ~ 0.9      2) 1.0 ~ 1.9  
3) 2.0 ~ 3.0      4) 0.3 ~ 0.5

44. 目前預防咬合面齲齒最實用的方法是

- 1) 洗牙 (oral prophylaxis)
- 2) 局部塗氟 (topical fluoridation)
- 3) 每天刷牙 (daily toothbrushing)
- 4) 溝窩封劑 (pit and fissure sealant)

48. 齲齒之產生與唾液成分, 及下列何種特質有正相關?

- 1) 抗菌能力
- 2) 流量及流速
- 3) 緩衝能力
- 4) 酸鹼度

49. 拒增橫樑之策略是預防口腔癌之三級五級工作中的那一項

- 1) 促進健康 (health promotion)
- 2) 特殊防護 (specific protection)
- 3) 控制疾病 (control disease)
- 4) 早期診斷, 早期治療 (early diagnosis & prompt treatment)

50. 就口腔疾病之預防層次來說, 下列何者不是初級預防 (primary prevention)?

- 1) 口腔 X-光片檢查
- 2) 毒化物的使用
- 3) 口腔衛生教育
- 4) 均衡營養的攝取

## \* 可使用電子計算機 \*

1. 試解釋與說明下列名詞或檢定 (35%)
  - (a) 統計學檢力
  - (b) 卡方分佈
  - (c) 中央極限定理
  - (d) 自由度
  - (e) 統計學 p 值
  - (f) 第二類誤差( $\beta$  error)
  - (g) Wilcoxon signed rank test
2. 城鄉的飲食型態可能影響學童的體位。爲了探討城鄉學生體位的差異性，某研究隨機選取城市與鄉村各 25 與 31 位國中學生，測得身體質量指數之平均值各爲 24.5 與 20.2，標準差各爲 2.2 與 1.8。(a) 試檢定城鄉學生身體質量指數母群體變異數的差異性? (10%) (b) 試述學生體位平均值差異性檢定的假設? (5%) (c) 試檢定城鄉學生身體質量指數母群體平均值的差異性? (10%) ( $\alpha = 0.05$ ) ( $F_{24,30,0.975} = 2.14$ ,  $t_{40,0.975} = 2.021$ ,  $t_{60,0.975} = 2.00$ )
3. 某非正交的 7 組平均值多重比較的實驗中，若研究人員欲使用 Bonferroni 多重比較法執行兩兩平均值差異的檢定，試問，(a) 共需執行幾次統計檢定? (5%) (b) 若  $\alpha$  level 設定爲 0.05，則整個實驗冒犯最大可能性的第一類誤差爲何? (5%)
4. 醫院急診的資料顯示，過去一年間，50 位發生頭部傷害的機車騎士中有 40 位無攜帶安全帽。此外，交通部的統計顯示，92% 的機車騎士會攜帶安全帽。若欲評估機車有無攜帶安全帽是否與頭部之意外傷害有關，(a) 試述最合適的統計分析方法爲何? (5%) (b) 虛無假設與對立假設爲何? (5%) (c) 統計分析結果爲何? (10%) ( $\alpha = 0.05$ ,  $\chi^2_{1,0.95} = 3.84$ )
5. 在迴歸模式分析中，研究者可用(0, 1)系統的虛擬變數替代類別性質的解釋變數。年齡與死亡率並非完全直線相關。若將年齡分類爲 0-9, 10-29, 30-39, 40-59,  $\geq 60$  歲五分類，並以 10-29 歲爲參考組。(a) 試問應使用幾個虛擬變數替代年齡?(3%) (b) 這些虛擬變數的譯碼結構爲何? (7%)