

請務必於試卷紙上作答，違者該科不於計分。

I. Vocabulary: Choose the answer that best completes the sentence. (20%)

1. Having beautiful hair is such a sign of health and attractiveness, particularly for white women, because their hair tends to be very _____, and it needs extra care.
a. cybernetic b. wasted c. fragile d. sober
2. Three Americans are among those killed in a deadly _____ last week in Algeria to rescue hostages taken when Islamic militants overtook a gas facility.
a. raid b. inaugural c. coverage d. hug
3. Nehemiah Griego, who is 15, said he had _____ and suicidal thoughts before he grabbed a rifle from his parents' closet and shot his mother in her head.
a. responsible b. surgical c. homewards d. homicidal
4. Priests _____ of abuse were sent away for treatment, but often only after long delays, and many cases slipped under the radar.
a. suspected b. limited c. struck d. permitted
5. The number of kids _____ with attention deficit hyperactivity disorder (ADHD) rose 24 percent between 2001 and 2010.
a. riddled b. diagnosed c. forced d. regarded
6. _____ by the Kaiser Permanente Southern California Institute, the study differs from previous ones in that it offered a comprehensive look at medical records.
a. Caused b. Remained c. tolerated d. Conducted
7. "If there are people trying to do bad stuff to our guys, then we'll take them out of the game, I suppose," he said in one of several interviews _____ to the media.
a. petitioned b. emphasized c. released d. initiated
8. Two additional attackers, armed with automatic rifles, stormed the area and fought with security forces for nearly eight hours. The _____ killed three police officers and all five attackers.
a. election b. assault c. regulation d. display
9. British designer Mary Katrantzou is known for her _____ prints. Now an artist has reimagined them into vivid photographs.
a. reasonable b. merciful c. brutal d. extravagant
10. While many people appeared _____ last week by the news that the Los Angeles Lakers star and his wife had dropped their divorce action, those close to the couple say this was always the inevitable end for the two.
a. stunned b. charged c. instant d. gained

II. Sentence Completion: Choose the word that best completes the sentence (10%)

11. Hard work can make _____ for a lack of intelligence.
a. down b. in c. up d. out
12. A number of questions came _____ at the meeting.
a. of b. X c. for d. up
13. The drowning man called _____ vain for help.
a. in b. X c. at d. for
14. In _____ of his youth, the police have decided not to continue with the case against him.
a. find b. view c. note d. think
15. Guess who I bumped _____ today? It was Michael!
a. on b. into c. at d. for

III. Cloze Test: Choose the best answer for each missing word or phrase in the following passages (20%)

The Holkham Hebrew Bible, in a show of Jewish books and documents from the Bodleian Library in Oxford, now on view at the Jewish Museum in New York. The book was printed in Naples in 1491/2, by one Joshua Solomon Soncino. Not only is it _____ 16 _____, but it's poignant as well. The hand-colored decoration shows how fully its maker _____ 17 _____, and appreciative of, the Christian culture of the Italian Renaissance. (Identical decoration was used on a chivalric romance.) Yet at

this same time, Jews _____18_____ in vast numbers from Spain and were confined to ghettos in Italy. The _____19_____ and segregation made no cultural sense, but that didn't stop it _____20_____.

16. a. gorilline b. gorger c. gorgeously d. gorgeous
17. a. was immersing b. immersing c. was immersed in d. immerse
18. a. were being expelled b. expel c. was expelled d. was expelling
19. a. persecute to b. persecution c. persecute d. persecuting
20. a. from happening b. happen c. happened d. on happening

The foursome _____21_____ a fishing expedition over the holidays and were headed back to Italy to start the new year.

Missoni was expected to attend men's fashion week in Milan this week, but his plane disappeared from radar shortly _____22_____ from the island. At first glance, the _____23_____ seems like a standard air-to-sea accident, but the Missoni family is not yet ready to give up hope. "A plane _____24_____ in this way, on a short route, without leaving any trace," Missoni's 28-year-old son Ottavio told an Italian newspaper last week. "I _____25_____ that the least plausible reason is that they crashed into the water."

21. a. have b. had been on c. had been d. have been on
22. a. of taking b. after taking c. after take off d. after taking off
23. a. disappeared b. disappears c. disappearance d. disappear
24. a. cannot vanish b. is to vanish c. should vanish d. could be vanished
25. a. remain convinced b. convinced c. cannot convince d. am convince

IV. Written Expression: Identify the underlined word or phrase that must be changed in order for the sentence to be correct (14%).

26. a) The Los Angeles City Council voted b) unanimous last fall to c) build a new football stadium d) in the heart of downtown.
27. Experts say a) sports teams rarely b) regulate cities the economic growth c) that is initially d) expected.
28. 2012 has been a) an 'awful' year b) for c) major Wall Street companies, so what should we d) impact in 2013?
29. a) Bonus and salaries b) have been cut at c) all of the big Wall Street d) firms.
30. a) Instead just b) searching for content that already has its own page c) on Facebook—think fan pages, groups, or events—Graph Search will d) allow users to make much more specific searches.
31. Google's a) big shift in search has been to move away from b) display links and letting users c) go on their way and answer more questions d) directly through information in the Google universe.
32. a) It was an b) audaciously political speech, a statement of personal and c) partisan principle, d) rather the expected broad bipartisan outreach.

V. Reading Comprehension: Choose the best answers to the following questions (36%)

The word *euthanasia* is of Greek origin and literally means "a good death." The American Heritage Dictionary defines it as "the act of killing a person painlessly for reasons of mercy." Such killing can be done through active means, such as administering a lethal injection, or by passive means, such as withholding medical care or food and water.

In recent years in the United States, there have been numerous cases of active euthanasia in the news. They usually involve the deliberate killing of ill or incapacitated persons by relatives or friends who plead that they can no longer bear to see their loved ones suffer. Although such killings are a crime, the perpetrators are often dealt with leniently by our legal system, and the media usually portrays them as compassionate heroes who take personal risks to save another from unbearable suffering.

The seeming acceptance of active forms of euthanasia is alarming, but we face a bigger, more insidious threat from passive forms of euthanasia. Every year, in hospitals and nursing homes around the country, there are growing numbers of documented deaths caused by caregivers withholding life-sustaining care, including food and water, from vulnerable patients who cannot speak for themselves.

While it is illegal to kill someone directly, for example with a gun or knife, in many cases the law has put its stamp of approval on causing death by omitting needed care. Further, many states have "living will" laws designed to protect those who withhold treatment, and there have been numerous court rulings which have approved of patients being denied care and even starved and dehydrated to death.

Because such deaths occur quietly within the confines of hospitals and nursing homes, they can be kept hidden from the public. Most euthanasia victims are old or very ill, so their deaths might be attributed to a cause other than the denial of care that really killed them. Further, it is often relatives of the patient who request that care be withheld. In one court case, the court held that decisions to withhold life-sustaining care may be made not only by close family members but also by a number of

third parties, and that such decisions need not be reviewed by the judicial system if there is no disagreement between decision makers and medical staff. The court rules that a nursing home may not refuse to participate in the fatal withdrawal of food and water from an incompetent patient.

33. As used in paragraph 1, which is the best definition of “lethal”?

- a. proceeding in a gradual, subtle way
- b. referring to the effect or influence of one person, thing, or action
- c. sufficient to cause death
- d. referring to promptness or speed in doing something

34. As mentioned in paragraph 2, “the perpetrators are often dealt with leniently by our legal system” because

- a. the perpetrators are committing a crime
- b. the perpetrators are willing to stop their loved ones’ pain and bear the risk of being charged with killing
- c. the perpetrators are heroes who are filled with compassion and portrayed by the media
- d. the perpetrators involve the deliberate killing of ill or incapacitated persons

35. In paragraph 3, one faces “a bigger, more insidious threat from passive forms of euthanasia” since

- a. caregivers use active forms of euthanasia
- b. that caregivers withholding life-sustaining care is easier than using active forms of euthanasia
- c. food and water can involve in the deliberate killing of ill
- d. vulnerable patients accepts passive forms of euthanasia

36. In paragraph 4, “put its stamp of approval on” can be rewritten as

- a. have or express an unfavorable opinion about something
- b. have the same characteristics or qualities as
- c. be grateful for something
- d. officially agree to or accept as satisfactory

37. The author maintains that death by withholding care is

- A. largely confined to hospitals
- B. difficult to prove if prosecuted
- C. often requested by family members
- D. approved by living wills

38. The attitude of the author can best be described as

- a. objective
- b. partial
- c. passionate
- d. macaber

39. To conclude, euthanasia is a kind of

- a. Greek death
- b. dehydrated death
- c. merciful death
- d. unbearable suffering

In his thought-provoking work, *Philosophical Investigations*, Ludwig Wittgenstein uses an easily conceptualized scenario in an attempt to clarify some of the problems involved in thinking about the mind as something over and above the behaviors that it produces. Imagine, he says, that everyone has a small box in which they keep a beetle. No one is allowed to look in anyone else’s box, only in their own. Over time, people talk about what is in their boxes and the word “beetle” comes to stand for what is in everyone’s box.

Through this curious example, Wittgenstein attempts to point out that the beetle is very much like an individual’s mind; no one can know exactly what it is like to be another person or experience things from another’s perspective—look in someone else’s “box”—but it is generally assumed that the mental workings of other people’s minds are very similar to that of our own (everyone has a “beetle” which is more or less similar to everyone else’s). However, it does not really matter—he argues—what is in the box or whether everyone indeed has a beetle, since there is no way of checking or comparing. In a sense, the word “beetle”—if it is to have any sense or meaning—simply means “what is in the box”. From this point of view, the mind is simply “what is in the box”, or rather “what is in your head”.

Wittgenstein argues that although we cannot know what it is like to be someone else, to say that there must be a special mental entity called a mind that makes our experiences private, is wrong. His rationale is that he considers language to have meaning because of public usage. In other words, when we talk of having a mind—or a beetle—we are using a term that we have learned through conversation and public discourse (rooted in natural language). The word might be perceived differently in each of our minds, but we all agree that it signifies something; this allows us to develop language for talking about conceptualizations like color, mood, size and shape. Therefore, the word “mind” cannot be used to refer specifically to some entity outside of our individualized conception, since we cannot see into other people’s boxes.

40. According to the last paragraph, “the word “mind” cannot be used to refer specifically to some entity outside of our individualized conception” because

- a. there is no way of checking or comparing what is going on in another person’s mind
- b. Wittgenstein’s rationale is that a mind makes our experiences private
- c. one often looks in someone else’s “box”

- d. the word “mind” is an easily conceptualized scenario
41. Wittgenstein would most likely disagree with which of the following statements?
- A. It is impossible to know another person’s thoughts.
 B. The mind is a special mental substance.
 C. The color green may actually look different to everybody.
 D. Words do not always accurately represent the things they symbolize.
42. As used in paragraph 3, which is the best definition or synonym for **discourse**?
- A. information given via the senses of sight or hearing
 B. engagement
 C. announcement
 D. written or spoken communication
43. In paragraph 3, since a “word might be perceived differently in each of our minds”
- a. it is impossible for us to communicate
 b. one develops conceptualizations of various objects
 c. one has to study philosophy
 d. imagination is important in regard to thinking
44. In the first paragraph, “thought-provoking” means
- a. inspiring b. frustrating c. puzzling d. applicable
45. “Beetle” refers to
- a. things that are put in boxes
 b. everyone indeed has an insect in his head
 c. the mind that is comparable to a box
 d. Wittgenstein’s attempt to communication

SOME sage once quipped that writing about music is about as edifying—and evocative—as dancing about architecture. Certainly most music criticism has a lifeless quality, packed with adjectives yet tuneless on the page. Yet Alex Ross, a music critic for the *New Yorker*, manages to stand out. His gifts as a writer are all the more impressive given that his subject tends to be the most difficult music composed in the last century, from Gustav Mahler to Steve Reich.

“The Rest is Noise”, his best-selling 2007 book on the history of the 20th century through its music, is now being re-worked as a year-long music festival at the Southbank centre in London. Although Mr Ross was not involved in organising the festival, he will be giving four lectures on the history of 20th-century music.

Mr Ross spoke to *The Economist* about why he wrote this book in the first place, and why it is particularly hard to get contemporary audiences excited about modern music.

“It took you ten years to write “The Rest is Noise”. What was your motivation?”

“It emerged really from an obsession that I had with 20th-century music going back to my teenage years. At university I immersed myself in it very heavily with a radio show that I had. I was also studying literature and history—especially late-19th century and early-20th century period—so it all coalesced.”

“I grew up listening to classical music in the traditional sense, from Bach to Brahms. That was the world I was completely absorbed in. I really didn’t listen to any other kind of music aside from this repertory. So it was something of a shock to slowly realise that there was more to the story, and I was shocked and fascinated when my piano teacher in high school played works by Schoenberg, Berg and Bartok. I started making my way through them at the piano, and after an initial struggle, I really fell in love with the music. I was fascinated by the music itself, by the surrounding cultural and historical context, and wanted to figure out how it all fit together. So it seemed inevitable that this would be the subject.”

46. In the last paragraph, “coalesced” means
- a. merge b. distribute c. confuse d. discriminate
47. Most people think that music criticism is
- a. contributive b. useless c. harmful d. vivid
48. Alex Ross
- a. stands out playing music in a year-long music festival
 b. organize music festival related to Mahler and Reich
 c. gives lectures concerning the history of a certain period of music

d. studies literature and becomes a writer of novels

49. The **best** synonym for “immersed” is

a. fascinated b. persuaded c. extended d. absorbed

50. According to Ross, music

a. is an independent subject that does not involve its context

b. usually has a great story

c. always brings one struggle when one tries to play the piano

d. is deeply related to culture and history

請務必於試卷紙上作答，違者該科不於計分。

* 可使用電子計算機 *

一. 請解釋下列名詞在流行病學的意義？(25 分)

1. Confounding factor
2. Case cohort study
3. Ecological fallacy
4. Odds ratio
5. Population attributable risk proportion

二. 欲排除性別與年齡之效應後比較 2010 年高雄市、台南市與屏東縣市全癌症發生率之差異性。請逐步詳細陳述如何使用直接標準化法完成結果之評估？(20 分)

三. A 與 B 兩社區於 2010 年 1 月各有 2400 與 2500 名居民，但於 2012 年 12 月則各增加至 2600 與 2800 名居民。2010 年 1 月，A 社區有 120 位居民罹患心血管疾病，其中 10 位病患於 2012 年 12 月之前遷移他地，40 位病患死亡。2010 年 1 月，B 社區則有 100 位居民罹患心血管疾病，2012 年 12 月之前 20 位病患遷移他地，10 位死亡。此外，A 與 B 兩社區至 2012 年 12 月各有 50 位與 25 位新發生病患，但其中各有 5 位病患死亡。請依上述資料回答下列問題。

1. B 社區心血管疾病之年發生率為何？(4 分)
2. A 社區心血管疾病之期盛行率為何？(4 分)
3. 2012 年 12 月 B 社區心血管疾病之點盛行率為何？(4 分)
4. 相對於 B 社區，A 社區居民罹患心血管疾病之發生率比為何？(4 分)
5. 相對於 A 社區，B 社區居民罹患心血管疾病之危險對比值(odds ratio)為何？(4 分)
6. 使用何種統計方法評估兩個社區心血管疾病盛行率之差異性？(5 分)

四. 以病例對照研究法探討成年人氣喘之病因。若研究者決定以配對的方法控制年齡與地區之干擾作用。

1. 可以使用那二種配對方法？(6 分)
2. 分別陳述如何使用此二配對方法以控制年齡與地區之干擾作用？(14 分)

五. 試說明 Information bias, Selection bias 與 Sampling variability 之意義，並比較其於流行病學研究之作用？(10 分)

高雄醫學大學 102 學年度 研究所碩士班 招生考試 系所：公共衛生學系碩士班 環境衛生學組
科目：環境衛生學

請務必於試卷紙上作答，違者該科不於計分。

一、 單選題 (70 分) [將答案排列整齊寫在答案紙，並註明題號，不需抄寫題目]

1. 台灣能源的能量供應以哪種最多(1)煤 (2)石油 (3)天然氣 (4)核能
2. 下列那種物質辛烷值被定為 100 (1)苯 (2)四乙基鉛 (3)異辛烷 (4)正庚烷
3. 評估水庫水質優養程度的指標「卡爾森指數」，下列何者不是用以評估「卡爾森指數」的水質參數 (1)透明度 (2)葉綠素 a (3)總磷 (4)溶氧量
4. 放射性等價劑量的單位 (1)戈雷 (2)西弗 (3)倫琴 (4)貝克
5. 下列何者不是游離輻射外在來源的防護準則(1)distance (2) time (3)shielding (4) Intake of chelating agent
6. 下列何者屬於不帶電(uncharge)游離輻射(1) x-ray (2) alpha particle (3) proton (4) triton
7. 下列何者不是非游離輻射(1)射頻輻射(2)微波(3)紅外線(4) γ -射線區
8. 都市中光化學煙霧的前驅污染物主要來自(1)汽機車排放 (2)工廠排放(3)樹木的芬多精 (4)海洋中釋出的鹽類
9. 有關廢棄物跨國境移動的處置與規定的公約為 (1) 巴塞爾公約 (2) 斯德歌爾摩公約 (3) 拉姆薩公約 (4) 華盛頓公約
10. 規範臭氧層破壞為那一個國際條約？ (1) 斯德歌爾摩公約 (2) 華盛頓公約 (3) 京都議定書 (4) 蒙特婁議定書。
11. 下列何者目前於台灣無室內空氣污染建議值之污染物 (1)二氧化氮 (2) 一氧化碳 (3)臭氧 (4) 細菌
12. 如果你進入一剛裝潢好的房子 10 分鐘後，發現有眼睛刺激，鼻子不舒服，造成這種現象的物質可能為 (1)苯 (2)臭氧 (3)甲苯 (4) 甲醛
13. 101 年 11 月 23 訂定發布室內空氣品質標準，甲醛之標準值為(1)0.06 ppm (2) 0.08 ppm (3) 0.1 ppm (4) 0.12 ppm
14. 1984 印度波帕爾事件由於哪種物質外洩，產生爆炸(1)二氧化硫 (2) 臭氧 (3)多氯聯苯 (4) 異氰酸甲酯
15. 1854 年 John Snow 首度證明公共用水的供應源可能是造成英國倫敦哪種疾病傳染的源頭 (1)血吸蟲病 (2) A 型肝炎 (3)霍亂 (4)傷寒
16. 下列何者非指標污染物 (1)二氧化碳 (2) 一氧化碳 (3)臭氧 (4) 鉛
17. 以台灣而言，空氣污染指標(PSI)超過 100 的污染物，主要為哪兩種(1)二氧化氮、臭氧(2) 臭氧、懸浮微粒(3) 懸浮微粒、一氧化碳 (4) 一氧化碳、碳氫化合物
18. 毒奶粉事件中，元兇為那種化合物 (1) 三聚氰胺 (2)三氯甲烷 (3) 三氯乙烯 (4) 三氧化二砷
19. 假設某人同一場所工作，工作 35 年，每年工作 250 天，每天工作 8 小時，工作場所的空氣中含 0.4 ug/m^3 的甲醛，而空氣中甲醛的背景濃度為 0.01 ug/m^3 。假設該人的呼吸量為 $0.83 \text{ m}^3/\text{hr}$ ，壽命為 75 歲，此人經由空氣的甲醛暴露量為 (1) 13.6 (2) 15.6 (3) 23.8 (4) 25.7 mg
20. 在過去，水中個別生物性污染物的偵測及確認相當困難，因此一般藉由測定哪種菌種的存在，當作飲用水遭受排泄物污染的指標？ (1)沙門氏菌 (2)金黃葡萄球菌 (3)志賀氏菌 (4)大腸菌
21. 1908 年所提出飲水中加入何種物質，使得賓州費城的傷寒致死病例明顯下降。(1)氟 (2)氯 (3)溴 (4)碘
22. 下列哪一種細菌易存在蛋、雞肉、豬肉、牛排 (1)志賀氏痢疾桿菌 (2)沙門氏菌 (3)肉毒桿菌 (4)金黃色葡萄球菌
23. 101 修定空氣品質標準，下列那項污染物為新納入至空氣品質管制標準(1)PM₁₀ (2) PM_{2.5} (3) CO (4)CO₂
24. 何者不是目前廢棄物的處理原則(1)減量化 (2) 回收再利用 (3)減毒化 (4)管末處理
25. 所謂硬水為來自於哪兩個化學物質 (1) 氟、氯 (2) 鈉、鉀 (3) 鐵、錳 (4) 鈣、鎂
26. 下列哪種化學殺蟲劑非用於控制蒼蠅 (1)磷化鋅 (2)有機磷 (3)氨基甲酸鹽類 (4)除蟲菊精

27. 如果使用 0.02 ppm 的 DDT 作為殺蟲劑，後來發現魚中體內的 DDT 濃度為 2500 ppm，請問生物放大作用為幾倍(1)25000 (2)100000 (3) 125000 (4) 150000
28. 何者屬再生能源(1)石油 (2) 天然氣 (3)電能 (4)太陽能
29. 下列哪個公害事件與光化學反應有關(1) 倫敦煙霧事件 (2) 洛杉磯煙霧事件 (3) 馬斯河谷事件 (4) 富山事件
30. 下列何者**不是**影響紫外線強度的因素 (1)海拔高度 (2) 緯度 (3)二氧化碳的濃度 (4)臭氧層的厚度
31. 2012 年 12 月舉行的聯合國氣候大會，同意將規定溫室氣體排放量的京都議定書效期延長至 **2020** 年，京都議定書雖然為對抗全球暖化唯一具有法定約束力的文件，然而下列那個國家從未簽署支持(1) 美國 (2) 澳洲 (3) 歐盟 (4)日本
32. 下列哪一個物質**不是**京都議定書所管制之氣體 (1) SF₆ (2) CH₄ (3) H₂O (4) N₂O。
33. 下列哪種醫療廢棄物之危害性最大 (1) 廢棄的藥物 (2) 廢棄的注射針 (3) 廢棄的放射性物質 (4) 廢棄的檢體。
34. 台灣塑化劑事件屬於(1) 空氣污染事件(2) 食品污染事件 (3) 水污染事件 (4) 土壤污染事件
35. 下列哪一種細菌會產生神經毒素使人麻痺；在缺氧（即厭氧狀態）、酸度低（pH 值接近 4.6）、溫度高於 4°C (39°F)、濕度高等情況下，會促使芽孢萌芽。(1)志賀氏痢疾桿菌 (2)沙門氏菌 (3)肉毒桿菌 (4) 金黃色葡萄球菌

二、 問答題 [將答案寫在答案紙，並註明題號，不需抄寫題目]

1. A 與 B 兩人於同一科學園區工作，A 住在都會區，B 住在郊區。下表為甲苯在科學園區、都會區、郊區與上下班之濃度分佈，請分別計算 A 與 B 兩人甲苯一天之暴露量 (μg)。假設 A 與 B 工作時數皆為 8 小時，A 上下班的時間為 0.5 小時，B 上下班的時間為 1 小時，呼吸量皆為 0.83 m³/hr。(12 分)

化學物	科學園區	都會區	郊區	上下班
甲苯	15.2	10	5.8	20.5

單位：(μg/m³)

2. 2010 年至今台灣與國際上皆發生一些環境衛生議題，請各舉一例，並說明解決方案。(18 分)

請務必於試卷紙上作答，違者該科不於計分。

* 可使用電子計算機 *

1. 請加以評論下列問題。

- (1)甲班同學生統成績資料如下：平均值 70 分、中位數 74 分、眾數 85 分。乙班同學生統成績資料如下：平均值 70 分、中位數 68 分、眾數 65 分。兩班成績平均值相同，是否可評論兩班之生物統計學成績之程度相當？(8 分)
- (2)將精神病人以配對方式分成 A、B 二組，使兩組病人年齡、性別、臨床症狀皆相同，分別接受 A 藥及 B 藥以了解精神疾病之發作或緩解情況。應利用何種統計方法最適合？此法的假設前提為何？(8 分)
- (3)注射某血清的人有不良反應平均機率為 0.005，改良此試劑後有 600 人接受注射，僅有一人產生不良反應，若想檢驗新試劑的不良反應率是否低於舊法，應利用何種統計方法最適合？此法的假設前提為何？(8 分)

2. 為了解高雄市國中生近視比率，隨機抽出 500 位學生為一組樣本，此樣本近視率為 55%，請回答下列問題：

- (1)此解釋在統計檢定中，第一類誤差、第二類誤差、P-value 與信賴區間的意義為何？(12 分)
- (2)請問高雄市國中生近視比率之 95% 信賴區間為何？(5 分)
- (3)若要使抽樣誤差不大於 2%，應抽出多少樣本？(5 分)

3. 某研究進行 ANOVA 檢定 5 種藥物降血糖效果，每種藥物分別治療 20 位糖尿病人，其組間變異量為 418.4，組內變異量為 3312.3。 $(F_{0.95(4,15)}=3.06, F_{0.95(5,20)}=2.71, F_{0.95(4,95)}=2.51, F_{0.95(5,100)}=2.34)$ (20 分)

- (1)請列出虛無假說與對立假說？
- (2)F 值為何？是否達統計顯著？並解釋檢定結果之意義？
- (3)血糖的治療效果有多少百分比是因藥物不同所影響？
- (4)進行事後檢定之目的為何？

4. 某研究想了解膽固醇濃度與體重之間的關係。共分析 126 位參與健檢民眾體重與膽固醇的資料。分析結果如下，並回答以下問題 ($\alpha=0.05$) (20 分)

模式	未標準化係數		標準化係數
	β 估計值	標準誤	β 分配
常數	32.41	7.62	
體重	4.22	0.65	1.24

- (1)寫出最小平方和迴歸線方程式？
- (2)標準化迴歸係數如何計算？應用此統計量之目的為何？
- (3)請列出虛無假說與對立假說，試檢定體重是否為預測膽固醇之危險因子？
- (4)若將自變項與應變項反置(將膽固醇當作自變項，體重當作應變項)，則得到之迴歸係數及相關係數大小不變，此說法是否正確？請評論。

5. 學者針對第二代健保實施前後對民眾進行滿意度調查，在實施前與實施三個月後各發一份問卷由相同民眾填寫，由很滿意至很不滿意五等級為 5 至 1 分，實施前後改變分數如下，用來評估實施前後滿意度調查是否改變。(14 分)

- (1) 利用 paired t-test 檢定是否合適？請評論。
- (2) 建議使用何種統計方法？此法優缺點分別為何？

前後改變分數	-5	-4	-3	-2	-1	0	1	2	3	4	5
人數	0	3	4	3	4	15	2	3	2	0	0

