

Part I. Question 1 to 10, you should choose the answer closest in meaning to the underlined word or phrase. **One answer only.** 2 points each.

- Regarding the presidential campaign, he does not see eye to eye with his wife.
(A) have any affection for (B) have any interest (C) agree with (D) show any passion as
- He suffered a massive hemorrhage and was immediately sent to the hospital.
(A) severe (B) compact (C) critical (D) immense
- A novel idea suddenly came to her mind, she immediately went to see her boss.
(A) imaginary (B) new (C) developed (D) realistic
- The voters opted for this presidential candidate because he promised to reduce taxes.
(A) chose (B) forgave (C) opposed (D) advocated
- He was put through university with money left by his grandfather.
(A) was admitted to (B) successfully finished (C) gave a mission to (D) carried a responsibility for
- The lectures in our university are quite liberal and broad minded.
(A) preeminent (B) obsessed (C) renowned (D) permissive
- In *Sense and Sensibility*, one sister ends up in a happy marriage while the other loses her first suitor and must fall back on a boring alternative suitor.
(A) fail to accomplish (B) slip and hit the ground (C) change seasons (D) accept a second choice
- University of California report warns that unless China radically changes its energy policies, its increases in greenhouse gases will be several times larger than the cuts in emissions being made by rich nations under the Kyoto Protocol.
(A) oil consumption (B) discharge of smoke (C) production of coal (D) energy saving
- As a spectator, it's quite easy to pick holes in other people's work.
(A) come up with (B) keep pace with (C) get even with (D) find fault with
- The students in our school are predominantly from the South.
(A) mostly (B) scarcely (C) particularly (D) partially

Part II. Question 11-15, please choose the answer that best completes the sentence. Question 16-25 you should choose the best answer to fill each of the numbered blanks in the passage. **One answer only.** 2 points for each.

The media [of an increasing number of surgical makeovers] says a lot about Korea's own 11 makeover. Not long ago, many people saw the country as a decidedly uncool industrial park pumping out cheap cars and appliances. But that started to change in the late 1990s, when the Korean government decided that entertainment could be an export industry. The film business in particular 12 government help and a big influx of private capital...

The popularity of Korean stars is 13 Korean 14 features as a standard of beauty across the region. Some sociologists see a subtext in the craze: a rebellion by Asian people against the images of Caucasian good looks that 15 much of the international trend.

- (A) country (B) image (C) race (D) medicine
- (A) benefitted from (B) inherited (C) messed up with (D) suffered from
- (A) naturalizing (B) blurring (C) establishing (D) diminishing
- (A) ethnic (B) export (C) prominent (D) legendary
- (A) export (B) in charge (C) take over (D) dominate

Question 16 -18

The topic of thought is one area of psychology, and many observers have considered this aspect in connection with robots and computers: Some of the old worries about AI (artificial intelligence) 16 the question of

whether computers could think. The first massive electronic computers, capable of rapid (if often unreliable) computation and little or no creative activity, were soon dubbed 'electronic brains.' A reaction to this terminology quickly followed. 17, computers were called 'high-speed idiots,' and effort to protect human vanity. In such a climate, the possibility of computers actually 18 was rarely considered: It was bad enough that computers might be capable of thought.

16. (A) link closely to (B) is linking closely to (C) have close linked (D) be closely linked
 17. (A) Putting them in their place (B) They are in their place
 (C) To put them in their place (D) With putting them in their place
 18. (A) being alive (B) could be alive (C) which alive (D) are alive

Question 19-20

The average American produces about 20 tons of the major greenhouse gas carbon dioxide (CO₂) every year. That might sound like a lot — and Americans do have among the biggest carbon footprints in the world — but the entire world emits around 27 billion tons of CO₂ each year, 19 transportation, electricity use, deforestation. Look at those numbers for a moment, and you'll realize there's very little that any of us can do on an individual level to stop climate change. Live like a monk, take away your 20 tons — stop breathing if you'd like — and you'll 20 scratch the surface.

19. (A) by (B) in (C) through (D) with
 20. (A) often (B) barely (C) strongly (D) constantly

Question 21-25

Why do Mickey Mouse, Ronald McDonald, and Superman have 21? They are all easily identified and powerful symbols of what some people call American 'cultural imperialism.' Most Americans would be surprised that these beloved cultural icons are often unwelcome by many overseas.

The cries of cultural imperialism are a 22 phenomenon. 23 western colonial empires in Asia, Africa and South America, nationalists in the newly independent countries often became outraged over the staying power of colonial cultures. These nationalists named the presence and domination of Western culture as 'cultural imperialism.' Paul Harrison in his book, 24, described it this way, "And so there grew up, alongside political and economic imperialism, that more insidious form of control --- cultural imperialism. It conquered not just the bodies, 25 the souls of its victims."

21. (A) in general (B) in this respect (C) in common (D) in short
 22. (A) relatively recent (B) recently relative (C) relative recent (D) recent relative
 23. (A) In order shrink of (B) Shrinking of (C) Upon shrinking of (D) With the shrinking of
 24. (A) is called *Inside the Third World* (B) *Inside the Third World*
 (C) who writes *Inside the Third World* (D) that names *Inside the Third World*
 25. (A) and (B) so (C) as (D) but

Part III. Reading Comprehension. In this part, you will read several passages. Each one is followed by one question or a number of questions about it (them). Question 26-40, you should choose the **ONE** best answer to each question. 2 points each.

Why don't people consult an herbalist and take his advice instead? One reason is that only a few herbalists have made a thorough analysis of herbal medicine. Most of the time, some herbalists don't know what makes up the herbal medicine they are prescribing. It is not uncommon that some people, especially young children, may suffer great pain because the herbal medicine qualifications of some herbalists are sometimes called into question. Some

of them have never received enough formal medical education. At best, they have just passed a test, which is given to make sure that they know the names of certain herbal drugs and their composition; at worst, they are no more than quacks. Finally, few large-scale experiments with herbal drugs are conducted.

Yet some people still ask herbalists for advice. They do so when doctors declare that no chemical medicine can treat a certain disease. Under the circumstances, people may gamble with their own lives, acting human guinea pigs for herbalists.

26. According to this passage, people may take herbs like ginger for several reasons. Which of the following is NOT one of them?

- (A) The herbs are cheap and easy to come by. (B) Their illness may not be serious enough
(C) The herbs may taste good (D) The herbs may really help them recover

27. In this passage, three reasons are given to explain why people won't go to see an herbalist. Which of the following is NOT one of them?

- (A) Qualification tests are not credible. (B) Herbalists are poorly educated
(C) Experiments are not widely conducted. (D) The components of herbal medicine are poisonous.

28. By saying "people may gamble with their own lives," the author suggests that it is _____ to ask an herbalist for advice.

- (A) sensitive (B) inevitable (C) risky (D) expensive

29. According to this passage, people may go to see an herbalist when their illness is _____.

- (A) unknown (B) incurable (C) infectious (D) serious

In the past, writing was considered exclusive and time-consuming. The advent of the printing press popularized the written word and ushered in the gradual rise in global literacy. The speed and legibility of writing was greatly improved by the typewriter. But all of these were eclipsed when the personal computer came of age as the standard tool for writing. But what new dimensions and drawbacks, if any, does it offer?

30. The expression 'ushered in' is closest in meaning to _____.

- (A) hindered (B) instigated (C) procured (D) harmonized

31. Which of the following could best replace the word 'eclipsed'?

- (A) taken over (B) redeemed (C) outshined (D) reproached

The rules of etiquette in American restaurants depend upon a number of factors: the physical location of the restaurant, e.g., rural or urban; the type of restaurant, e.g., informal or formal; and certain standards that are more universal. In other words, some standards of etiquette vary significantly while other standards apply almost everywhere. Learning the proper etiquette in a particular type of restaurant in a particular area may sometimes require instruction, but more commonly it simply requires sensitivity and experience. For example, while it is acceptable to read a magazine in a coffee shop, it is inappropriate to do the same in a more luxurious setting. And, if you are eating in a very rustic setting, it may be fine to tuck your napkin into your shirt, but if you are eating in a very rustic setting it may be fine to demonstrate a lack of manners. It is safe to say, however, that in virtually every restaurant it is unacceptable to indiscriminately throw your food on the floor. The conclusion we can most likely draw from the above is that while the types and locations of restaurants determine etiquette appropriate to them, some rules apply to all restaurants.

32. With what topic is this passage primarily concerned?

- (A) rules of etiquette (B) instructions in proper etiquette
(C) the importance of good manners (D) variable and universal standards of etiquette

33. According to the passage, which of the following is a universal rule of etiquette?

- (A) tucking a napkin in your shirt (B) not throwing food on the floor
(C) reading a magazine at a coffee shop (D) eating in rustic settings

Now scientists are beginning to find that the most sexual part of the human body is the brain and it is inherently different in men and women. Scientific literature contains abundant evidence that males and females, even when little boys and girls, fall into distinct behavioral stereotypes. But with the advent of ever more powerful brain scanners, it seems these distinctions are the result of physical differences in the chemistry and neural circuitry of the brain that are laid down at birth.

34. This passage might be from an article on

- (A) Human Revolution (B) Men and Women: Minds Apart
(C) Difference in Sexuality between Men and Women (D) The Newly developed brain scanner

35. "That men are better in target-directed motor skills, whereas women are stronger in precision manual tasks" would be a good example of _____.

- (A) behavioral distinctions between males and females.
(B) the fact that brain is inherently different in men and women.
(C) cultural influences (D) men being more capable than women

British people have mixed opinions about the Americans, reflecting the close but sometimes troubled relationship between the two nations. When people get to know Americans as individuals they have a lot more respect and affections for them than the popular, rather negative stereotype based on a casual meeting or on television programs might suggest. For many British people the US is associated with power in international politics, Hollywood, money and violence. Although Americans believe they rule the world, few of them know much about anything outside the US. The British think that money matters more than anything else to Americans, and they also think the US is a dangerous place where cannot walk in the streets or subways without fear of being attacked. Despite this, many want to go there for their holidays. And Young people generally have a much more positive attitude and love everything that comes out of America.

On the other hand, the US once belonged to Britain, and many Americans have British ancestors, so when Americans think of Britain, they think of a place that seems very familiar. Americans watch British television programs, especially period dramas, see James Bond films, and read detective stories by Agatha Christie. On the basis of these experiences, which are common even to people who are not of British origin, most Americans know more about Britain than about any other county. However, many Americans would have difficulty drawing map of Britain. They think the country consists of London and a village in Scotland where one of their ancestors came from. Every British has a servant and has great respect to the Queen. Americans admire the behavior of the British believing that they are quaint, although they themselves would never want all their social rules. British people, to them, are perfectly polite and proper, always knowing which knife and fork to use, saying "please" and "Excuse me." However, they are often conceived as being snobbish and do not seem friendly. The famous British reserve seems cold to Americans who are more used to an open enthusiastic way of communicating. Thus a result, when British say: "That's no problem" when they know that it will be a big problem, it confuses the Americans.

36. What might be a proper title for this reading?

- (A) What British people think of Americans. (B) What Americans think of British people.
(C) Great Britain, the ancestors of the Americans. (D) Cultural stereotypes.

37. What do British usually think of Americans?

- (A) They have mixed feelings. (B) They feel indifferent.
(C) They never want to have any association with American. (D) They admire everything that is American.

38. Which of the following is true about the US from British perspective?

- (A) Most Americans know a lot about the world outside the US.
(B) Few Americans know a lot about the world outside the US.
(C) Americans value power more than anything else.
(D) The US subway is the only public transportation available.

39. When Americans think of Britain, what do they usually feel?

- (A) They feel indifferent. (B) They feel annoyed.
(C) They feel familiar. (D) They never want to be associated with Britain.

40. According to the reading, which of the following is true?

- (A) American can easily draw a British map.
(B) Many Americans watch British television programs.
(C) Americans never wanted to be associated with Britain because they once belonged to Britain.
(D) Americans think only the British movie stars can have servants.

Part IV. Essay. 20 points.

Please write a well-structured essay in 150 to 200 words on the following topic:

As a global citizen, what do you think your responsibilities and rights are supposed to be? Please use examples to support your statements.

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Answers can be stated in Chinese or English.

1. Please explain and differentiate the following epidemiological terms:
 - (a) Random sampling and Random allocation (6%)
 - (b) Validity and Precision (6%)
 - (c) Confounding factor, intermediate variable, and effect modifier (6%)
 - (d) Ecological bias and Berkson bias (6%)

2. A case-control study is implemented to determine whether betel-quid chewing leads to diabetes. 300 diabetes patients and 300 controls were recruited from a hospital.
 - (a) If questionnaire data are to be used, would you ask about current betel quid chewing consumption? (5%)
 - (b) For which of the following variables should be matched to cases: age, sex, addition of betel leaf to betel quid, cigarette smoking and alcohol drinking? Why? (6%)
 - (c) The hospital-controls are used in the study, should patients with specific diseases be avoided? (5%)

3. In a clinical trial, 24 of 138 patients with arthritis taking a new drug continue to have rheumatic arthritis attacks 3 months later, whereas 68 of 146 patients with arthritis using a traditional drug continue to have arthritis attacks. Whether new treatment approach is more effective in preventing arthritis attacks? Please answer the following questions.
 - (a) What was the reduction risk of rheumatic arthritis attacks attributable to new drug? (3%)
 - (b) What was the relative risk in new drug users compared to traditional drug users? (3%)
 - (c) What proportion of rheumatic arthritis reduction in new drug users was attributable to new drug? (3%)
 - (d) In order to assess the effectiveness of new drug intervention, how many patients will be needed to treat (NNT) to get a patient with a benefit outcome? (3%)

4. In trying to determine the relationship between smoking habit and depression, adult men with similar age accepted for questionnaire interview and depression assessment. The smoking status was classified as non-smoke, low level (<10 cigarettes/day), and high level of smoke (≥ 10 cigarettes/day). The differences are statistically significant and presented in the table below.
 - (a) If the data are from a cross-sectional study, please list two reasons for leading to the differences. (5%)

- (b) If the data are from a cohort study, please list two reasons for leading to the differences. (5%)

Smoking status	population	cases	rates
No-smoke	1500	15	0.01
Low dose	1300	65	0.05
High dose	1200	120	0.10
total	4000	200	0.05

5. The data show the mortality of motor-related accidents in workers and no-workers in one community. The age-specific mortality rates of accidents are different between two groups, but the crude mortality rates of accidents are very similar.

- (a) If we want to compute mortality rates of accidents in workers and no-workers, adjusting for age distribution. Which standardized method is proper, direct or indirect? (3%)
- (b) Compute mortality rates of accidents in workers and no-workers, adjusting for age distribution (whole state as the standard) and state your findings. (8%)

Age	No-workers			Workers			Whole state		
	Total population	death	Mortality	Total population	death	Mortality	Total population	death	Mortality
30-44	2500	70	0.0280	1000	15	0.0150	3500	85	0.02429
45-60	2000	35	0.0175	3500	55	0.0157	5500	90	0.01636
>60	1500	15	0.0100	1500	50	0.0333	3000	65	0.02167
Total	6000	120	0.0200	6000	120	0.0200	12000	240	0.0200

6. A case-control study examines the risks of coffee drinking and smoking in relation to bladder cancer. The data show in table below. Please answer the following questions.

- (a) compute odds ratios for coffee drinking in the absence of smoking, smoking in the absence of coffee drinking, and combined exposure relative to neither factor. (9%)
- (b) compute synergy index, S, between coffee drinking and smoking. (3%)

Smoker	Coffee drinker	
	Yes	No
Yes		
Case	62	56
Control	39	87
No		
Case	10	31
Control	25	126

7. An epidemic event in one elementary school shows the distribution of onset times and case numbers in the Table below. In the epidemic of 271 students occurred vomiting and diarrhea after eating lunch at school. Please answer the following questions:

- What type of epidemics is most likely to explain the distribution? Was it propagated by person to person spread? State your reasons. (5%)
- Please calculate the incubation time in this epidemic? (5%)
- How do you account for the two cases with onset time 10.0 to 11.0 hours after lunch? (5%)

Hours after eating lunch	Case numbers	Cumulative incidence (%)
<0.5	8	0.0295
0.5~1	26	0.1255
1~1.5	38	0.2657
1.5~2	50	0.4502
2~2.5	41	0.6015
2.5~3	48	0.7786
3~3.5	17	0.8413
3.5~4	20	0.9151
4~4.5	15	0.9705
4.5~5	3	0.9816
5~5.5	3	0.9889
10~10.5	1	0.9926
10.5~11	1	1.0000

一、解釋名詞（每題 6%，共 30%）

1. Sequestration of CO₂
2. Renewable energy
3. Fuel cells
4. TCLP
5. Risk assessment

二、問答題

1. 試列舉兩項你認為台灣目前最嚴重的環境衛生議題，試說明其發生原因及實質影響內容。(20%)
2. 何謂 "ozone-depleting substances (ODS)"？試列舉兩種 ODS 之替代物質，並說明其替代原因。(12%)
3. 試述鉛暴露可能對人體造成的影響，及其常見的暴露途徑。(12%)
4. 環境衛生的研究，常使用化學分析儀器，請問欲分析空氣樣本中多環芳香烴化合物 (PAHs) 含量，應使用哪一種分析儀器？簡述該儀器分析原理。(12%)
5. 何謂 "endocrine disrupters (EDs)"？試說明人體暴露於 EDs 的可能來源？及暴露後可能造成的健康影響。(14%)

公共衛生學系碩士班 生物統計學試題

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請回答下列生物統計學有關的問題，每題 20 分，計 100 分。

1. 就母數檢定而言，分佈曲線是常態還是偏態對檢定結果的影響甚大。試從描述性統計作圖的角度說明有那些生物統計圖可用以協助研究者判定連續性資料的分佈是否常態。
2. 所謂雙變量相關(bivariate correlation)是指兩個變項之間的相關。試就兩變項因測量屬性(levels of measurement)的不同可用那些生物統計分析的方法探討雙變量相關。
3. 實驗設計最常見的是用在比較實驗組與對照組兩組樣本的平均數有無達到顯著性差異。通常在進行 t 檢定之前須事先進行樣本數的估計(sample size estimation)。試說明在進行樣本數估計時應知道那些已知的條件。
4. 試估計在進行比較 A, B, C, D, E 五組樣本平均數之差異時，研究者若不採用單因子變異數分析(one-way ANOVA)F 檢定，而改採用每兩組間的 t 檢定，將會使研究者犯 type I error 的機率從 5% 提高到多少？
5. 某公共衛生研究者欲以複迴歸分析(multiple regression analysis)預測國高中生之性別、年齡、身高及體重對肺活量(vital capacity, VC)的影響。在進行分析之前為慎重起見，他/她先進行共線性診斷(collinearity diagnostics)。試問此研究者為何要進行共線性診斷？又此複迴歸分析的結果跑出 R 及 R^2 ，試問 R 及 R^2 所代表的意義為何？