

Part I. Question 1 to 10, please choose the answer closest to the underlined word or phrase. Question 11 to 15, please choose the answer that best completes the sentence. One Answer Only. 2 points.

1. Some of the **potential** dangers to cows treated with synthetic bovine growth hormone were brought into light through the effort of some scientist.
(A) related (B) possible (C) certain (D) obvious
2. As more U.S workers spend their days at keyboards, hand injuries and lawsuits are **multiplying**.
(A) increasing (B) minimizing (C) boundary-crossing (D) profit-making
3. There are several **bodies** that match volunteers with voluntary groups, including the National Volunteering Centre.
(A) organizations (B) remains (C) people (D) motivations
4. Piaget believed that we go through four stages in understanding the world. Each of the stages is age-related and consists of **distinct** ways of thinking.
(A) new (B) simple (C) different (D) exact
5. Some people think that spoken language is **transient** but writing tends to last because of its physical medium (characters on some surface).
(A) unimportant (B) temporary (C) interesting (D) clear
6. But what most prevents women from reaching the boardroom, say bosses and headhunters, is lack of **hands-on** experience of a firm's core business.
(A) significant (B) available (C) tested (D) practical
7. Manufactured in the **tranquil** New England town of Concord, New Hampshire, the famous Concord Coach came to symbolize the Wild West.
(A) peaceful (B) bustling (C) industrial (D) tiny
8. With oil prices shooting up, the demand for big cars is **dwindling**. Now compact cars are on great demand.
(A) depressing (B) surpassing (C) decreasing (D) swirling
9. All of this she conferred on me without ever **setting foot in** the kitchen of her house.
(A) leaving (B) dressing (C) entering (D) preparing
10. In choosing your career, you should follow your heart, but you also need to be **rational**.
(A) making decisions based on intelligent thinking (B) making decisions using strong emotion of feeling
(C) making decisions because of relationships (D) making decision because of profits
11. _____ abolishing death penalty is a global trend, the public is so polarized over the issue that it requires more discussion.
(A) Because (B) Whereas (C) Although (D) In addition to
12. Women now often work areas _____ medicine, business management and higher education, which would not have been possible 100 years ago.
(A) regardless of (B) in virtue of (C) due to (D) such as
13. Both the National Cancer Institute and the World Health Organization say there isn't evidence to support the assertion that cell phones are a _____ threat.
(A) health public (B) healthy public (C) public-health (D) publically health
14. _____ on barren slopes can help prevent erosion.
(A) Planting trees (B) For trees to be planted (C) In order to plant trees (D) Trees are planted
15. Almost four in five people around the world believe that _____, a poll for the BBC World Service suggests.
(A) access the Internet is a fundamental right (B) that access to the Internet is a fundamental right
(C) fundamental right accessing the Internet is (D) the fundamental right is access the Internet

II. Question 16 to 25, please choose the best answer to fill each of the numbered blanks in the passages. 2 points each.

People communicate in many different ways and yawning is one important means of 16 communication. It gives many different 17 to people and everyone yawns. Some birds, reptiles, fish and most mammals also yawn. However, the reason why we do it is still a mystery. There is also very little research available on yawning as for most people, it is not a problematic 18. Here are a few things that are known about yawns: 1.) The 19 duration of a yawn is about six seconds; 2.) in humans, the 20 yawn happens about eleven weeks after conception; 3.) Yawns become contagious to people between the first and second years of life.

16. (A) audio (B) friendly (C) non-verbal (D) scenario
 17. (A) messages (B) funs (C) challenges (D) experiments
 18. (A) resistance (B) repeat (C) reflex (D) rejection
 19. (A) critical (B) analytical (C) terminal (D) average
 20. (A) most difficult (B) earliest (C) most fundamental (D) experiential

Culture shock can be an excellent lesson 21 human differences. The reason culture shock occurs is that we are not prepared for these differences. 22 the way we are taught in our culture, we are all ethnocentric. This term comes from the Greek root ethnos, 23 a people or group. Thus, it refers to 24 our outlook or world view is centered on our own way of life. Ethnocentrism is the belief that one's own patterns of behavior are the best: the most natural, beautiful, right, or important. Therefore, other people, 25 that they live differently, live by standards that are inhuman, irrational, unnatural, or wrong.

21. (A) on relative values and understanding (B) in relative values and in understanding
 (C) about relating values and on understanding (D) by means of relative values and understanding
 22. (A) Because of (B) Because (C) In the event of (D) In spite of
 23. (A) it means (B) it is meaning (C) meaning (D) by meaning
 24. (A) that the fact (B) the fact that (C) the fact (D) the fact that is
 25. (A) to the extend (B) by and large (C) more or less (D) drawing a line

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

Dariusz Leszczynski, a research professor at Finland's Radiation and Nuclear Safety Authority in Helsinki, has done studies indicating that radio frequency radiation may create a stress reaction in the cells that line blood vessels, leading to a dangerous breach in the blood-brain barrier. "Mobile-phone radiation may be able to indirectly hurt cells, perhaps by interfering with their ability to repair normal DNA damage," he says. "Given the scientific uncertainty, it's premature to say the use of cell phones is safe."

If radio frequency radiation increases the chances of developing brain cancer, it should show up in long-term studies of cell-phone users. But many epidemiological studies have found no clear connection, including a 2007 Danish Cancer Society study of 421,000 cell-phone users, which led many in the media to conclude that mobiles are harmless. To date, "peer-reviewed scientific evidence has overwhelmingly indicated that wireless

devices do not pose a risk," says John Walls, a spokesman for CTIA, a global wireless association.

26. According to Prof. Dariusz Leszczynski,

- (A) whether or not the use of cell phones is safe is still uncertain.
- (B) it is proved that cell phone would impair normal DNA.
- (C) Using cell phones will block blood vessels.
- (D) The research on cell phones is not reliable.

27. The passage following these two passages might be about

- (A) the autobiography of Dariusz Leszczynski. (B) problems with many of these studies.
- (C) the development of brain cancer. (D) peer review of cell phones.

While fats have lately acquired a bad image, one should not forget how essential they are. Fats provide the body's best means of storing energy, a far more efficient energy sources than either carbohydrates or proteins. They act as insulation against cold, as cushioning for the internal organs, and as lubricants. Without fats, energy would have no way to utilize fat-soluble vitamins. Furthermore, some fats contain fatty acids that contain necessary growth factors and help with the digestion of other food.

An important consideration of fat intake is the ratio of saturated fats to unsaturated fats. Saturated fats, which are derived from dairy products, animal fats, and tropical oils, increase amount of cholesterol in the blood. Cholesterol may lead to coronary heart disease by building up in the arteries of the heart. However, unsaturated fats, derived from vegetable oils, tend to lower serum cholesterol if taken in a proportion twice that of saturated fats.

The consumption of a variety of fats is necessary, but the intake of too much fat may lead to a variety of health problems. Excessive intake of fats, like all nutritional excesses, is to be avoided.

28. Comparing with carbohydrates or proteins, fats

- (A) store food more efficiently. (B) deserve their bad image.
- (C) consume more oils. (D) provide more fluids.

Which of the followings is the main idea of

29. The main idea of the third paragraph is that

- (A) people are eating less and less fat today. (B) fats should be eliminated.
- (C) excessive consumption of fats may be dangerous to one's health.
- (D) fats taken in the proper proportion may reduce serum cholesterol.

30. With which of the following is the whole passage primarily concerned?

- (A) The role of fats in human health (B) The dangers of cholesterol
- (C) The benefits of fats in the diet (D) The importance of good nutrition

Gender Equity

(1) In the past decade, increasing attention has been paid to the issue of gender equity in the science, technology, engineering, and mathematics (STEM) fields. Research publications, including the American Association of University Women Educational Foundation's Tech Savvy (2000) and Women at Work (2003), have documented the troubling shortage of girls and women preparing to work in these fields. In response to this "**shrinking pipeline**" of girls and women in STEM, a wide array of programs and strategies has been promoted and funded by governmental and nongovernmental organizations.

(2) The AAUW Educational Foundation and the National Science Foundation are among the top supporters of gender equity projects in the STEM fields. In the last decade alone, these two foundations have

invested nearly \$90 million to fund more than 400 projects specifically aimed at increasing the participation of girls and women in STEM fields. This body of projects presented a unique opportunity to explore the nature of gender equity intervention projects in STEM. Until now, no comparable survey of gender equity intervention projects in STEM has been done.

(3) The research for this report, led by Yasmin Kafai and a team of researchers at the University of California, Los Angeles, was guided by several overarching questions: What types of projects have been funded within and across the various STEM disciplines? Are there areas where we have concentrated our efforts, and areas we have overlooked? What patterns emerge among the project types and disciplines?

(4) The findings document impressive efforts in preparing girls and women for science, technology, engineering, and mathematics studies and careers and demonstrate a rich and diverse body of gender equity intervention projects within all STEM disciplines. About two-thirds of the projects involved extracurricular informal learning activities such as museum visits and field trips. Equally important were mentoring activities in many forms, ranging from traditional one-to-one to large-scale online versions, and professional development activities, such as course taking and network building, that were successfully integrated into projects.

(5) At the same time, the findings reveal some troubling trends. Many projects focused predominantly on career advice without providing access to necessary skill and content development. A majority of projects occurred outside the school curriculum. While such extracurricular projects can be effective and valuable, the overall lack of integration into the school curriculum suggests that gender equity remains on the margins of teaching and learning in the STEM fields. Finally, an absence of data on participant demographics and a lack of project evaluation make it difficult to determine who is being served and if and how project outcomes are being measured.

31. What does the phrase "shrinking pipeline" in paragraph refer to?

- (A) the shortage of oil supply (B) the shortage of labor supply
(C) the shortage of training programs (D) an issue that is getting smaller

32. Which of the sentences below best express the essential information in the highlighted sentence in the passage 2? (Incorrect choices change the meaning in important ways or leave out essential information.)

- (A) These projects allowed us to study the differences between men and women employed in STEM jobs.
(B) We were able to intervene when women STEM workers were being treated unfairly.
(C) Studying these projects helped to create more gender equity intervention projects.
(D) STEM jobs were able to be studied by exploring nature.

33. In paragraph 3, "Are there areas where we have concentrated our efforts, and areas we have overlooked?"

In this sentence, "we" refers to

- (A) the author and his/her coworkers. (B) people involved in creating gender equity projects.
(C) people in the STEM disciplines. (D) Yasmin Kafai and his team.

34. According to paragraph 4, what is one positive finding of this research?

- (A) the STEM field is rich and diverse (B) many projects involved mentoring opportunities
(C) girls and women are being prepared for STEM jobs (D) the quality of the questions asked

35. According to paragraph 5, what is one negative trend discovered through this research?

- (A) access to unnecessary content (B) extracurricular projects were common
(C) evaluation of the projects was too specific (D) focus on career advice

Chili peppers are decidedly an international phenomenon, spicing up regional dishes from Thailand to North Africa. In Thailand Confidential, this week's Globalist Bookshelf selection, Jerry Hopkins gives insight

to the culture and history surrounding this fiery fruit (yes, technically a fruit) and highlights how it may be one of the world's best medical miracles.

In Thailand — where restaurants rate their dishes by placing one, two, three, and sometimes four little red chilis on the menu next to the dishes' names to alert diners — I am tolerated. Barely.

A longtime friend, who is a Thai chef, used to bring home food purchased at street stalls and as she placed this on the table, she would point to one container and say, "Mine," then to another, saying, "Yours." As if to say, "Poor dear."

Thailand is not the birthplace of the Capsicum, or chili pepper; it only acts as if it is. In fact, the chili was imported, along with much else in the national diet. However, in Thailand the **per capital consumption** of the small, fiery fruit is surely as high if not higher than it is anywhere else. And it is in the use of unprocessed, fresh, ripe chilis where Thailand rings all the loudest bells.

The truth is that chili is an international phenomenon. There is a bimonthly magazine published in the United States, Chili Pepper (there is no agreement on the spelling), and a wide variety of products is available, including pepper-shaped wind chimes, bells, and strings of Christmas tree lights. There is even a Hot Sauce Club of America; members receive two new hot sauces and a newsletter every month. There is even a popular American rock and roll band that calls itself the Red Hot Chili Peppers. Yes, the band is hot.

36. From these passages, we learn that the author

- (A) enjoys chili peppers everywhere.
- (B) does not really like chili peppers.
- (C) likes to have chili peppers to go with some certain kind of food.
- (D) like to go to restaurant famous for chili peppers.

37. The best title for these passages is

- (A) Thailand and Chili peppers. (B) Chili Peppers and Spicy Dishes.
- (C) Different Tastes all over the World. (D) Chili Peppers and Globalization.

38. Based on the passages, which of the following is NOT TRUE?

- (A) That Thailand uses unprocessed, fresh, ripe chili peppers has started the popularity of chili peppers.
- (B) Thailand exports a lot of chili peppers.
- (C) Chili peppers are a kind of fruit.
- (D) Thai food is normally quite spicy.

39. What does **per capital consumption** mean?

- (A) amount consumed per person within a specific population.
- (B) capital population and its consumption.
- (C) capital with that the government provides each person for food consumption.
- (D) capital that each person can get for their daily food consumption.

40. What is the main idea of the last paragraph?

- (A) Chili peppers are very popular in the United States.
- (B) The use of chili peppers in the United States is being influenced by Thailand.
- (C) Chili peppers are made into different toys.
- (D) Chilli peppers have made a rock band very hot.

IV. Essay. 20 points.

Please write a **well-structured** essay on **how you can prepare yourself for living in a diverse and more global society** in 150 to 200 words discussing your opinions.

高雄醫學大學 99 學年度 研究所 招生考試 命題系所：職業安全衛生研究所
考試科目：環境暨職業安全衛生學

一. 單選題 (50 分) (請在電腦卡上作答)

1. 造成 1984 年印度波帕爾事件，起因為那個化學物質外洩造成的 (1)多氯聯苯 (2) 異氰酸甲酯 (3)硫化氫 (4)苯二甲酸酯
2. 2008 年毒奶粉事件中，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
3. 台灣行動電話基地台的訊號如為 900 MHz，其安全標準為 (1) 0.45 (2)0.9 (3)4.5 (4)9 mW/cm²
4. 下列何者不是臭氧層破壞物質(1) CFC11 (2) 海龍 1301 (3)四氯化碳 (4) 甲烷
5. 「巴塞爾公約」主要為規範 (1)溫室氣體 (2) 光化學煙霧先驅物質 (3)有害廢棄物 (4) 持久性有機污染物
6. 下列何者不是「卡爾森營養指數」測量的項目(1) 水中溶氧 (2)透明度 (3)總磷 (4) 葉綠素 a
7. 下列指標污染物中何者為光化學反應之產物 (1)二氧化氮 (2) 一氧化碳 (3)臭氧 (4)碳氫化合物
8. 99/1/26 修正之「勞工作業環境空氣中有害物容許濃度標準」中，石綿纖維容許濃度為 (1)1 f/cc (2) 0.5 f/cc (3)0.25 f/cc (4)0.15 f/cc
9. 有一作業環境中，內含結晶型游離二氧化矽 13%的粉塵，請問此環境粉塵屬於 (1)第一種粉塵 (2)第二種粉塵 (3)第三種粉塵 (4)第四種粉塵
10. 承上題，此環境中總粉塵的八小時日時量平均容許濃度(PEL-TWA) (1) 0.5 mg/m³ (2) 1 mg/m³ (3) 2 mg/m³ (4) 4 mg/m³
11. 使用活性碳捕集管，以 20 mL / min 之流率於 25°C、一大氣壓下連續採樣八小時，分析結果前段為 10 mg，後段為 0.5 mg，脫附效率 90%，則測定結果濃度為多少 mg/m³？ (1) 5.6 (2) 101 (3) 110 (4) 122。
12. 勞工安全衛生法之罰鍰由下列何者執行？(1)法院 (2)當地主管機關(3)勞動檢查機構 (4)衛生主管機關
13. 依勞工健康保護規則規定，勞工噪音暴露工作日八小時日時量平均音壓級多少分貝以上時，勞工應接受噪音作業特殊健康檢查？(1) 80 (2) 85 (3) 90 (4) 110 分貝。
14. 鑄造間處理熔融鋼鐵或其他金屬之作業場所，其勞工工作日時量平均綜合溫度熱指數超過中央主管機關規定值時，應多久測定綜合溫度熱指數一次以上？(1) 三個月 (2)六個月 (3)九個月 (4)一年
15. 對於噪音峰值之間隔超過幾秒以上才可視為衝擊性噪音 (1) 0.035 (2) 0.125 (3) 0.5 (4) 1 秒
16. 某室內無日曬高溫作業場所，其乾球溫度為 28°C，黑球溫度為 45°C，綜合溫度熱指數為 31°C，則自然濕球溫度應為(1) 25 (2)26 (3)27 (4)27.5 °C。
17. 於勞動契約存續中，由雇主所提示，使勞工履行契約提供勞務之場所為 (1)作業場所 (2)工作場所 (3)就業場所(4) 運作場所
18. 勞工健康檢查費用由誰負擔？(1) 雇主 (2) 勞工(3) 雇主及勞工各半(4) 事業單位提撥之福利金
19. 下列何者非屬勞工安全衛生法所稱特別危害健康之作業 (1) 高溫作業 (2) 高架作

業 (3) 異常氣壓作業 (4) 游離輻射作業

20. 假設一勞工的工作場所飲用水含 $0.3\mu\text{g/L}$ 的甲醛，此勞工每天於工作場所飲用 1L 的水，且由 25 歲工作至 65 歲。請估算此勞工因飲用工作場所飲用水，進入體內之甲醛潛在劑量？(假設 250 working days / yr) (1) 1 mg (2) 3 mg (3) 5 mg (4) 10 mg
21. 生物暴露指標 (Biological exposure indices, BEIs) 中，如該指標物非專一來自某有害物而已，暴露於其他有害物也同樣會產生該指標物，會以何種標記標示 (1) Nd (2) Sc (3) Sq (4) Ns。
22. 根據「危險性工作場所審查暨檢查辦法」之分類，使用異氰酸甲酯、氯化氫、氨、甲醛、過氧化氫或吡啶，從事農藥原體合成之工作場所或從事以化學物質製造爆炸性物品之火藥類製造工廠，屬於 (1) 甲類 (2) 乙類 (3) 丙類 (4) 丁類 危險性工作場所。
23. 下列何者不是勞工作業環境測定實施辦法規定之作業環境測定項目？(1) 綜合溫度熱指數 (2) 二氧化碳濃度 (3) 噪音音壓級 (4) 振動加速度級。
24. 依照「勞工健康保護規則」，雇主對未滿四十歲之在職勞工，應每幾年實施一般健康檢查 (1) 1 (2) 2 (3) 3 (4) 5 年
25. 依法令規定，苯之特殊健康檢查紀錄應至少保存多久？(1) 3 (2) 10 (3) 20 (4) 30 年

二. 多重選擇題 (30 分) (答案可能為一個或多個，請在電腦卡上作答)

1. 依法令規定，下列何物質之作業環境測定得以直讀式儀器實施？(1) 二硫化碳 (2) 次乙亞胺 (3) 甲苯 (4) 鉛
2. 持久性有機污染物包括 (1) 戴奧辛 (2) 氰化鉀 (3) 六氯苯 (4) 溴甲烷
3. 溫室氣體包括 (1) CO_2 (2) C_6H_6 (3) N_2O (4) CH_4
4. 雇主不得使女工從事的危險性或有害性工作包括 (1) 坑內工作 (2) 處理爆炸性、引火性等物質之工作 (3) 超過二百二十伏特電力線之銜接 (4) 散佈有害輻射線場所之工作
5. 何者為點污染源(non-point source) (1) 農田的沖蝕造成的污染 (2) 工廠廢水處理場的排放 (3) 衛生下水道的排放 (4) 工業區聯合污水處理廠的排放
6. 勞工安全衛生法適用於下列哪些行業 (1) 大眾傳播業 (2) 國防事業 (3) 之大專院校等之實驗室 (4) 大學之電腦教室
7. 依照勞工安全衛生法，事業單位工作場所發生哪些職業災害時，雇主應於二十四小時內報告檢查機構 (1) 發生死亡災害者 (2) 發生災害之罹災人數在三人以上者 (3) 氨、氯、氟化氫、光氣、硫化氫、二氧化硫等化學物質之洩漏，發生一人以上罹災勞工需住院治療者 (4) 上下班途中，發生交通事故者
8. 有關「勞工作業環境空氣中有害物容許濃度標準」，下列何者錯誤 (1) 容許濃度未滿 1 者，其變量係數為 3。 (2) 註有「皮」字者，表示該物質對勞工會引起刺激感、皮膚炎及敏感等特性。 (3) 註有「瘤」字者，表示該物質經證實或疑似對人類會引起腫瘤之物。 (4) 可作為工作場所以外之空氣污染指標。
9. 下列何者可能由皮膚進入人體？(1) 氯丹 (2) 氯 (3) 二氯松 (4) 一品松
10. 就勞工安全衛生法下列敘述何者有誤 (1) 勞工謂受僱從事工作獲致工資者 (2) 雇主謂事業主或事業經營負責人 (3) 中央主管機關為內政部 (4) 主管機關在直轄市為直轄市政府

三. 問答題 (20 分) (請在**答案紙**上作答)

1. 依勞工安全衛生法令規定，對粉塵外作業之特別危害健康作業之勞工，雇主於實施體格檢查、健康檢查後應採取的措施為何，請列出？
2. 某甲將一部分事業轉給某乙，甲方及乙方於同一工作場所分別雇用勞工進行作業，依照勞安法規定，甲方應告知乙方哪些事項？甲、乙兩方於同一工作場所作業，甲方為防止職業災害，應採取哪些必要措施？乙方勞工於該工作場所發生死亡職業災害時，甲、乙雙方應採取何種措施及應負之勞工安全衛生法之責任為何，請列出？

高雄醫學大學 99 學年度 研究所 招生考試 命題系所：職業安全衛生研究所
考試科目：生物統計及流行病學

※ 可使用電子計算機

1. 在人體生理值與環境暴露的評估中，研究資料顯示，血壓值呈現類似常態分佈趨勢，但環境樣本中的砷含量並不呈現常態分佈。試問在不轉換資料的狀況下，最合適描述此二變數之分佈的量性方法為何？各方法的意義為何？(10%)
2. 一個初探型研究結果顯示，35位罹患心臟血管疾病的個案中，5名個案具有高量的環境荷爾蒙暴露；然而25名健康的對照個案中，只有2名個案具有高量的環境荷爾蒙暴露。
 - (1) 請敘述罹患心臟血管疾病是否與高量環境荷爾蒙暴露有關的假設考驗？(5%)
 - (2) 檢定上述問題最合適的統計方法為何？(5%)
 - (3) 統計分析結果為何？(10%)
3. 80個地區當日空氣污染物濃度與每日呼吸道疾病急診數之相關係數為0.15。請使用統計方法評估此樣本相關係數是否顯著不等於0.22？(20%)($Z_{0.95} = 1.645$, $Z_{0.975} = 1.96$)
4. 請使用疾病三段五級的預防觀念，提出防治職業性呼吸系統疾病的方法？(20%)
5. 請分別說明非同期追蹤法(non-concurrent prospective study)與重疊病例對照研究法(nested case-control)如何進行？(20%)
6. 研究者欲分析某工廠近20年員工罹患膀胱癌的發生率是否比全國民眾罹患膀胱癌的發生率高。結果評估中，研究者考慮控制年齡與性別的差異性。請問如何建構流行病學分析方法？(10%)