

English Test for Entrance Examination of Postgraduate Institute:(2 points for each question)

I. Please choose the fittest answer to complete the sentence in each question.

- ___1. The student raced out of the classroom and bumped ___ a teacher who was carrying a cup of coffee.
(A) into (B) at (C) to (D) on
- ___2. Ann says the party will be ____, so I suggest you wear a nice dress.
(A) familiar (B) formal (C) fluent (D) funny
- ___3. Nancy gained four kilograms during the holidays, so she decided to go ___ a diet.
(A) on (B) to (C) in (D) up
- ___4. Don't follow that car too ____. If it stops quickly, there could be an accident.
(A) directly (B) exactly (C) nearly (D) closely
- ___5. After we ate the fried chicken, our fingers were oily, so we asked the waitress for more
(A) napkins (B) packages (C) orders (D) menus
- ___6. The sea ___ seventy-five percent of the surface of our world.
(A) making up (B) makes up (C) make up what is (D) which makes up
- ___7. A laser beam ___ a concentration of pure light.
(A) consists of (B) which consists of (C) exhibiting (D) exhibit
- ___8. The universe ___ we know it might have begun with a great explosion.
(A) as (B) that (C) and which (D) and
- ___9. The bus was full, but Judy saw an empty seat next to an old woman. "___ I sit here?" she asked her.
(A) Should (B) Would (C) May (D) Will
- ___10. Mr. Li teaches mathematics at a public high school in Kaohsiung. He ___ there since 1995.
(A) is (B) was (C) will be (D) has been
- ___11. Being a newcomer, Alice is ___ with the area.
(A) informative (B) unfamiliar (C) aware (D) confident
- ___12. Cars and motorcycles are ___ in this area; people can only walk around here.
(A) permitted (B) promoted (C) banned (D) favored
- ___13. From the window, we got a(n) ___ view of the mountains.
(A) breathtaking (B) chilly (C) excited (D) moral
- ___14. Despite losing the use of his legs and some use of his arms, the ___ boy managed to ski with the help of a special device.
(A) shy (B) scared (C) disabled (D) elegant
- ___15. Jeff's English had improved so ___ that everyone was surprised.
(A) gradually (B) critically (C) bitterly (D) dramatically
- ___16. The violent storm almost destroyed the area. People living there really ___ an ordeal.
(A) scored (B) dragged (C) resisted (D) underwent
- ___17. ___ computer use may not cause wrist injuries, it can still give you a headache or make your eyes dry.
(A) Once (B) When (C) While (D) Despite
- ___18. ___ he restrained himself from blurting out those hurtful words, his girlfriend would not have left.
(A) Because (B) Had (C) Should (D) When
- ___19. Einstein was Jewish, and in 1933 the Nazi government ___ his property and German citizenship.
(A) taken away (B) took away (C) has taken away (D) was taken away

20. The trash can, ___ with rejected term paper, sat in the corner of the dorm room.
(A) fill (B) to fill (C) filling (D) filled
21. Sleep and exercise are ___ health.
(A) in essence (B) essentially (C) essential to (D) essential for
22. He not only read the copy, but ___ on it.
(A) reported (B) apologized (C) regretted (D) commented
23. Mr. Anderson says that in many ways he ___ his success to his wife's support.
(A) owes (B) distributes (C) deceives (D) betrays
24. The spread of knowledge could be ___ by means of books.
(A) accomplished (B) defined (C) claimed (D) exported
25. If you abide by your promise, you will keep your promise _____.
(A) temporarily (B) periodically (C) permanently (D) unwillingly

II. Please choose the item that interprets best the sentence in each question.

26. Education has its fashion, and like all other fashions they come and go. This means that
(A) Education should make us fashionable
(B) Education is sometimes popular, sometimes unpopular
(C) Students study and leave school after some time
(D) Ideas on education change all the time
27. He isn't above lying when it suits his needs.
(A) He will lie when he feels it's necessary.
(B) He knows it is always necessary to tell the truth.
(C) He never lies even when it would benefit him to do so
(D) He usually lies down when he needs to rest.
28. People's interest in their health and their demand for various forms of medical care have enormously increased.
(A) People are taking more interest in their health than in medical care.
(B) People are taking more interest in their health but demanding less medical care.
(C) People are taking more interest in their health and demanding much more medical care.
(D) Medical care, drugs and hospital care grow more and more costly.
29. Primitive man was probably more concerned with fire as a source of warmth and as a means of cooking food than as a source of light.
(A) In the ancient times fire was used for getting warmth and cooking food rather than for getting light.
(B) Primitive man had nothing to do with light.
(C) In the ancient times the main use of fire was not for getting warmth and cooking food but for getting light.
(D) Primitive man regarded fire as the chief source of light.
30. A bookstore is the last place in the world I expect to meet you.
(A) I finally find you in a bookstore.
(B) If I want to meet you, I should go to a bookstore.
(C) I met you in a bookstore last time.
(D) It is impossible for us to meet in a bookstore.
31. Mr. Braun is a friend of mine whose profession is to advise or represent others in legal matters. Mr. Braun is
(A) a judge (B) a lawyer (C) a policeman (D) a guide
32. For the American masses their civilization is a canned food civilization, so that the house wives, instead of being pressed by domestic chores, have plenty of time for reading and social activities, but on the other hand, people must be content with uniform and unpalatable dishes.
(A) It seems that American housewives are pressed by the jobs of cooking and washing dishes, etc.
(B) American housewives scarcely spend time visiting old friends or doing a lot of reading.
(C) American housewives enjoy ready-made food very much.
(D) It seems that Americans can't enjoy delicious food.

33. A general feature of modern society is the gap that separates the adult from the young, and it is most painfully felt between parents and children. In this paragraph, we are talking about the gap between ____.
- (A) families (B) society (C) parents (D) generations
34. One should read the classics in winter, because then one's mind is more concentrated; read history in summer, because one has more time; read ancient philosophers in autumn, because they have such charming ideas; and read the collected works of later authors in spring, because the Nature is coming back to life. What kind of reading requires most concentration?
- (A) History (B) Modern writing. (C) The classics. (D) Philosophy.
35. It may be said that the problem in adult education seems to be not the piling up of facts but practice in thinking.
- (A) Education methods for adults and young people should differ.
(B) Adults do not seem to retain new facts.
(C) Adults seem to think more than young people
(D) Adult education should stress ability to think.

III. Please choose the most proper item for each blank in the essays.

ESSAY 1

Jane lived near the sea, and she often went down to the beach to sit on the sand. Being by the sea was like being in a different 36. In front of her was the deep blue water; it slowly moved 37 her and then moved away again. Sometimes it came up very quickly and then her feet were covered by the salty water. 38 her, soft white clouds continually floated across the pretty blue sky. Noisy white 39 were flying over her head as well. 40 they dived down suddenly to catch a fish, and then they flew right back up into the air. Jane often sat by the sea for hours to enjoy this special place.

- ___ 36. (A) way (B) part (C) lake (D) world
___ 37. (A) for (B) with (C) toward (D) from
___ 38. (A) Above (B) Ahead (C) Besides (D) Next
___ 39. (A) sands (B) birds (C) clouds (D) ships
___ 40. (A) Sometimes (B) Although (C) When (D) If

ESSAY 2

Champ is a young male chimpanzee. Recently, he did something that surprised scientists. The scientists had 41 some grapefruit in the sand, and only Champ knew where the grapefruit was. When the other chimps were in the area, however, Champ 42 that he did not know where the grapefruit was. Later, when the other chimps 43 Champ went right to the spot 44 the grapefruit was hidden, dug it up, and ate it. 45, Champ was able to make plans and trick his friends.

- ___ 41. (A) buried (B) eaten (C) grown (D) dug
___ 42. (A) realized (B) pretended (C) wondered (D) admitted
___ 43. (A) fell asleep (B) fall asleep (C) will fall asleep (D) are going to fall asleep
___ 44. (A) which (B) there (C) what (D) where
___ 45. (A) To the scientists' relief (B) Amazingly (C) To make matters worse (D) However

ESSAY 3

"Culture shock," according to specialists in intercultural studies, refers to the feelings which people 46 when they come into a new environment. 47 their studies, scientists have found that there are three stages of culture shock. In the first stage, the newcomers like their environment. Then, when the novelty 48, they begin to hate the people, the apartment, and everything 49 in their new environment. In the final stage of culture shock, the newcomers 50 their surroundings and, as a result, enjoy their life there.

- ___ 46. (A) experience (B) experiencing (C) experienced (D) to experience
___ 47. (A) Of (B) Despite (C) For (D) In
___ 48. (A) takes off (B) puts off (C) wears off (D) takes over
___ 49. (A) too (B) else (C) more (D) as
___ 50. (A) live with (B) appeal to (C) adjust to (D) escape from

解釋名詞 (10 %)

- A. glycosaminoglycan
- B. GM₁
- C. T_m of membrane
- D. HRE (hormone response element)

解釋下列物質之功能,角色 (10 %)

- A. chi sequence
- B. SINEs
- C. Okazaki fragment
- D. RNAi
- E. SOS response

簡答題 (80 %, 作答時專有名詞以英文書寫)

1. 同一反應在酵素催化之下及無酵素作用之下,那一項反應的性質受到改變 ? (3 %)

2. 某酵素遵守 Michaelis-Menten equation, 請利用下列其 V_o , [S] 數據估算此酵素之 K_m 值 (5 %)

V_o ($\mu\text{mole}/\text{min}$)	substrate added (mmole/L)
217	0.8
325	2
433	4
488	6
647	1000

- 3. 簡述人體內 amino acid 其碳骨架(carbon backbone)代謝的可能途徑 (5 %)
- 4. 變性蛋白質(denatured proteins)如何再逆回去原始蛋白質(native proteins)? 並寫出變性蛋白質與原始蛋白質性質上的相異性 (5 %)
- 5. 何謂 protein targeting ? (5 %)
- 6. 人體內 amino acid 其 amino group 代謝過程中的 NH_4^+ 主要以那兩種 amino acid 形式於血液中運輸 ? (2 %)

7. 人類主要儲存何種分子為其細胞能量來源？就結構觀點解釋不同分子其儲存量及氧化產生能量效益差異性之可能原因 (5%)
8. 何謂 pyruvate-alanine cycle？並闡述其生理意義 (5%)
9. 脂肪組織(adipose tissue)lipoprotein lipase 的 K_m 值高達心臟(heart)的 100 倍之多,解釋其生理意義 (5%)
10. 簡述飲食膽固醇(cholesterol)經腸道吸收至血液循環而進入肝臟的可能途徑若進入肝外組織則可能的途徑又為何？(6%)
11. 簡述一分子 acetyl-CoA 經檸檬酸循環(citric acid cycle)氧化生成水與二氧化碳過程中,能量生成的情形 (5%)
12. NADH 經"respiratory chain" 氧化並生成 ATP 的過程中,連結"electron transfer" 及"ATP 生成"的事件為何？(4%)
13. protein kinase 催化蛋白質磷酸化(protein phosphorylation)此反應可能於蛋白質的那些 amino acid 上進行？
並簡述一個包含 second messenger 及 protein phosphorylation 的訊息傳遞途徑 (signal transduction pathway) (7%)
14. 寫出參與大腸桿菌(E.coli) mismatch pair 過程之蛋白質及酵素 (5%)
15. 解釋 promoter 及 enhancer, 並描述決定 promoter sequence 之方法 (5%)
16. 簡述基因表現(gene expression)過程中,調解蛋白質(regulatory protein)的 protein-protein interaction 種類 (4%)
17. 何謂 trans fatty acid？對人體健康有何影響性？(4%)