

國立暨南國際大學九十二學年度碩士班研究生入學考試試題

第 1 節科技英文 適用:(生醫所生醫組 521 生醫所醫工組 531)

(本試題共 6 頁,第 / 頁)

考生注意: 1. 依次序作答, 只要標明題號, 不必抄題。

2. 答案必須寫在答案卷上, 否則不予計分, 並限以藍黑色筆作答。

3. 試題隨卷繳回。(餘詳詳閱試場規則)

一、字義類比, 選出一個最恰當的答案 (35%)

1. Golf : Holes ::

- A. badminton : feather
- B. football : kick
- C. baseball : innings
- D. tennis : net
- E. swimming : pool

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2. Fault : Earthquake ::

- A. death : sorrow
- B. pain : relief
- C. delta : river
- D. lava : volcano
- E. flower : blossom

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3. Neurosis : Psychosis ::

- A. fear : dread
- B. demise : disease
- C. attack : war
- D. illness : treatment
- E. nervousness : reaction

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4. Acid : Carboy ::

- A. disillusion : life
- B. solution : mineral
- C. water : jug
- D. discipline : army
- E. destructiveness : railway

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5. Blueberry : Pea ::

- A. sky : purity
- B. potato : raspberry
- C. sky : star
- D. purity : world
- E. blue : green

6. Square : Diamond ::

- A. cube : sugar

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- B. circle : ellipse
- C. innocence : jewelry
- D. rectangle : square
- E. prizefight : baseball

7. Intern : Medicine ::

- A. surgeon : hospital
- B. custodian : museum
- C. priest : church
- D. apprentice : trade
- E. debutante : party

8. Automobile : Gasoline ::

- A. fire : fuel
- B. man : energy
- C. airplane : propeller
- D. man : food
- E. disease : germs

9. Sugar : Granular ::

- A. metal : globular
- B. water : viscous
- C. salt : savory
- D. flour : powdery
- E. dough : flaky

10. Doctor : Lawyer ::

- A. client : illness
- B. client : ailment
- C. patient : litigation
- D. ailment : client
- A. patient : client

11. Crab : Crustacean ::

- A. grasshopper : insect
- B. spider : insect
- C. cow : bovine
- D. pork : pig
- E. soldier : army

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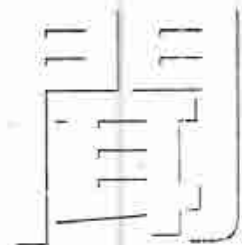
12. Umbrella : Rain ::

- A. roof : snow
- B. aspirin : cold
- C. screen : insects
- D. hood : coat
- E. sewer : water



13. Speedometer : Speed ::

- A. odometer : distance
- B. barometer : weather
- C. thermometer : degree
- D. altimeter : aviation
- E. pedometer : velocity



14. Camera : Photography ::

- A. ruler : measurement
- B. food : hunger
- C. airplane : air
- D. landscape : flatness
- E. quotation : allusion



二、克漏字：請細讀以下文章，在每題四個答案中選出一個最適當的答案 (35%)

When it comes (1) memory, there might just be something to the old adage "use it or lose it." (2) in the February 13 issue of the *Journal of the American Medical Association*, researchers provide further evidence that people who participate more frequently in cerebrally (3) activities have a decreased risk of developing Alzheimer's disease. Robert S. Wilson of the Rush Alzheimer's Disease Center and colleagues examined more than 700 participants in the Religious Orders Study, a group of Catholic nuns, priests and brothers who have agreed to annual memory testing and brain donation at the time of (4). At the study's outset, the subjects underwent cognitive testing and filled out a questionnaire probing the amount of time they spent engaged in common pastimes involving information processing: watching TV, listening to the radio, reading, playing games or solving puzzles and going to museums. Participation frequency was rated on a five-point scale ranging from every day (five points) to once a year or less (one point). The scientists (5) the subjects: age 65 or older and dementia free at the start of the study or an average of 4.5 years and administered annual follow-up cognitive tests.

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Over a seven-year period, 111 participants (6) Alzheimer's disease. The researchers found an inverse correlation between the frequency of cognitive activity and the risk of developing the disease. For each one-point increase in a subject's score on the scale of intellectual activities, they report, the risk of developing the disease decreased by 33 percent. Moreover, people with the highest frequency of activity had a 47 percent lower risk of disease compared with those with the lowest activity level.

The precise mechanisms governing such an association between mental stimulation and reduced risk of Alzheimer's disease remain unclear. Some scientists propose that the tasks afford protection (7) making the brain more efficient and therefore less vulnerable to the damage wreaked by Alzheimer's. Others suggest that frequent mind flexing strengthens processing skills and allows the brain to compensate for age-related declines. It is also possible that people who develop Alzheimer's may be less inclined, years earlier, to engage in cognitively stimulating activity. "Further research," says Elisabeth Koss, assistant director of the National Institute on Aging's Alzheimer's Disease Centers Program, "should help better sort out whether cognitive activities can be prescribed to reduce risk of Alzheimer's disease and why that may be so." --Sarah Graham [Scientific American, April 14 2003]

1. A) to B) for C) with D) in
2. A) To write B) Writing C) Written D) Write
3. A) challenging B) challenge C) challenged D) challengingly
4. A) dead B) died C) death D) dying
5. A) are following B) following C) follow D) followed
6. A) have been developed B) have been developing C) developed D) develop
7. A) with B) in C) by D) for

Trash-collecting cells in the brain (8) microglia were believed to fuel the progress of Alzheimer's disease. A new study published in the May issue of the journal *Nature Medicine*, however, (9) that they can actually help (10) the condition. All it takes is a little extra Transforming Growth Factor Beta-1 (TGF- β 1). Indeed, Tony Wyss-Coray of the Gladstone Institute of Neurological Disease and his colleagues from the University of California at San Francisco found that increased concentrations of this signaling molecule stimulate microglial cells to clear away β -amyloid substance that accumulates in the brains of Alzheimer's patients and creates harmful plaques. "People always thought that the inflammation and microglial activation

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were bad," Wyss-Coray explains. "But we showed that, when stimulated by TGF- β 1, microglial activities can be (11) "

The researchers studied mice genetically engineered to produce both β -amyloid and extra TGF- β 1. (12) with mice with normal TGF- β 1 levels, these animals had 75 percent fewer plaques and 60 percent lower β -amyloid levels. To investigate the correlation further, the team put microglial cells, β -amyloid and TGF- β 1 (13) petri dishes and found that after 18 hours the microglia had destroyed most of the β -amyloid. Because TGF- β 1 has many effects in the body, it cannot be used to treat Alzheimer's, Wyss-Coray says. Instead the molecules that microglia produce in response to TGF- β 1 may (14) more viable drug target --Harald Franzen [Scientific American, May 1 2001]

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|------------------|---------------|-----------------|---------------|
| 8. A) calling | B) so called | C) called | D) call |
| 9. A) finds | B) found | C) it was found | D) find out |
| 10. A) fighting | B) fight | C) fought | D) to fight |
| 11. A) benefit | B) beneficial | C) beneficial | D) benefited |
| 12. A) Comparing | B) Compared | C) Compared | D) Comparison |
| 13. A) on | B) for | C) in | D) into |
| 14. A) proof | B) prove | C) proven | D) proving |

三、請細讀以下文章，並將之整理寫成 100 字內的中文短文 (30%)

1. The space-based Global Positioning System (GPS) signal that guides smart bombs and cruise missiles to their targets underpins U.S. technological superiority on the battlefield. Yet because it is relatively easy to jam, it is also the Achilles' heel of U.S. military might. Although the integrity of the GPS signal was maintained in the war with Iraq, enemy attempts to corrupt it underscored the need to protect GPS-dependent weapons and navigation systems. Against a more capable enemy, GPS might find itself among the first casualties of any new conflict. [Scientific American, April 14 2003]
2. A new design for photovoltaic cells may reduce the cost of the expensive devices that convert sunlight into electrical energy. Scientists at the University of California, Santa Barbara [Nature, 421,616 (2003)], developed the novel architecture which may sidestep the need for costly materials and manufacturing methods. In conventional solar cells, a layer of silicon hosts several key processes simultaneously to derive useful electrical energy. For example, the semiconductor absorbs sunlight and converts the light energy into electron and holes (positively charged electron vacancies). At the time, the material separates electrons and holes and delivers the charge carriers to current collectors. The job calls for high-purity materials and methods. Now, the multiplayer photovoltaic-cell structure has been devised, in which the photon-absorption and

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charge-separation functions occur in distinct layers that can be prepared by simpler means. [C&E News, February 10 2003]

3. Warm-blooded animals have elaborate physiological controls to maintain constant body temperature. It has long been known that the level of serum iron in animals falls during infection. A relationship between fever and iron has been studied. It was found that microbial synthesis of siderophores, iron-bounded substances, in bacteria of the genus *Salmonella* declined at environmental temperatures above 37°C and stopped at 40.3°C . Thus, fever would make it more difficult for an infecting bacterium to acquire iron and thus to multiply.

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