

四、閱讀英文技術報告及萃取要點的能力(能力指標 4)

一、選擇題：

1. (2)你認為一般企業在招考新人必考的項目為何？(1)專業知識，(2)英文程度，(3)一般常識，(4)儀器操作
2. (2)你知道Perry Handbook是一本怎樣的書？(1)化學合成概念，(2)化學工程手冊，(3)化學藥典，(4)化工字典
3. (2)下列何者是中華民國國家標準的標誌？(1)GB，(2)CNS，(3)JIS，(4)ANSI
4. (4)下列何者不在泛用塑膠之列？(1)PVC，(2)PE，(3)PP，(4)PTA
5. (4)科技論文撰寫的次序，第一部分是(1) conclusion, (2) abstract, (3) reference, (4) title。
6. (4)The Joule-Thomson expansion occurs at constant enthalpy. 根據此敘述，Joule-Thomson 實驗為一個(1)等容程序，(2)等壓程序，(3)等溫程序，(4)等焓程序。
7. (3)TiCl₃ solution (30%, w/v TiCl₃ BDH Laboratory, England) was diluted with distilled water and stirred for 65 h at room temperature. 根據此敘述，下列何者錯誤：TiCl₃ 溶液，(1)被攪拌，(2)被稀釋，(3)被蒸餾，(4)為外購品。
8. (2)以下何種程序並非分離程序：(1) Crystallization，(2) Mixing，(3) Distillation，(4) Drying。
9. (3)物理化學實驗中，溶液中的吸附所使用之等溫吸附方程式為(1) Langmuir isotherm，(2) Temkin isotherm，(3) Freundlich isotherm，(4) step isotherm。
10. (4)下列何者非質譜儀之質量分析器：(1) ion-trap (2) quadrupole (3)magnetic sector(4) hollow cathode lamp。
11. (2)應用光電比色計做定量分析是基於哪一個定理、效應或方程式：(1)Mosley Law，(2) Beer's Law，(3) Doppler effect，(4)Nernst equation。
12. (4)IC chip manufacturing is a very complex process. It involves manufacture of materials, circuit design, processing equipment, wafer processing, die testing, and chip packaging. 根據此文，請選出下列何者未被提及：(1)材料製造，(2)封裝測試，(3)電路設計，(4)無塵室技術。
13. (3)Some, like Polystyrene(PS) and polymethyl methacrylate(PMMA), are hard, rigid, glassy

plastics at room temperature, while others, for example, polybutadiene and polyethyl acrylate, are soft, flexible rubbery materials. If, however, polystyrene(PS) and polymethyl methacrylate(PMMA) are heated to about 130°C, they exhibit typical rubbery properties, and when a rubber ball is cooled in liquid nitrogen, it becomes rigid and glassy. So, there is some temperature, or narrow range of temperatures, below which an amorphous polymer is in a glassy state, and above which it is rubbery. This temperature is known as the (1)熱裂解溫度, (2)結晶溫度, (3)玻璃轉移溫度, (4)熱變形溫度。

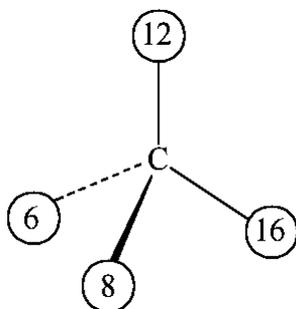
14. (2)No material crosses the system boundary. Changes can take place inside the system, but no mass exchange occurs with the surroundings. This system represents a (1) open system, (2) closed system, (3) flow system, (4) steady-state system。
15. (2)中文名稱「原料、規範、效率、排空、鼓風機」請依序由下列 A 至 J 項中選擇其正確的英文字彙：(1)ADEHJ, (2) ACEGJ, (3) BDFHI, (4) ACEGI。(A) raw material, (B) by product, (C) specification, (D) qualification, (E) efficiency, (F) coefficient, (G) purge, (H) full, (I) compressor, (J) blower。
16. (4)醛類的英文字為 (1) amides, (2) ethers, (3) esters, (4) aldehydes。
17. (1)What is the main composition of liquefied petroleum gas? (1) butane, (2) ether, (3) methane, (4) octane。
18. (1)下列何種方法最適合用來測量高分子的數量平均分子量：(1) osmometry, (2) light scattering (3) viscometry, (4) gel permeation chromatography。
19. (2)查閱化工操作之文獻資料最常用的化工手冊為(1) Wikipedia, (2) Perry's Handbook, (3) Merck Index, (4) Mathematical Handbook。
20. (4)下列化合物之化學式何者錯誤：(1) sodium oxide : Na_2O , (2) copper(I) sulfide : Cu_2S , (3) dinitrogen pentoxide : N_2O_5 , (4) ammonium chlorite : NH_4ClO_3 。
21. (2)以下何者非SI 基本物理量：(1) Temperature, (2) Pressure, (3) Time, (4) Length。
22. (4)catalyst preparation 意指：(1)觸媒性質, (2)觸媒活性, (3)觸媒顆粒, (4)觸媒製備。
23. (3)物理化學實驗中, 溶液中的吸附以活性碳為吸附劑, 吸附劑稱為：(1)absorbent, (2)absorptent, (3)adsorbent, (4)adsorptent。
24. (c)In the two structures shown below, what do the positions labeled with the arrow have in

common ?



- the same type of hybridization on the carbon atom
- the same geometry around the carbon atom
- the same number of hydrogen atoms bonded to the carbon atom**
- both carbon atoms are involved in a bond

25. (b) The numbers on the carbon center of the following molecule represent atomic numbers. The molecule is in



- the R configuration.
- the S configuration.**
- The carbon is not a chiral center in this molecule.
- The exact configuration cannot be determined without knowing additional atomic numbers.

26. (b) Which of the following is the definition of a pair of enantiomers ?

- A pair of structures that are superimposable mirror images of one another
- A pair of stereoisomers that are non-superimposable mirror images of one another**
- A pair of stereoisomers that are not mirror images of one another
- A pair of stereoisomers that have equal specific rotations

27. (b) Which of the following correctly describes a molecule that is achiral ?

- Non-superimposability of the molecule on its mirror image

b. Superimposability of the molecule on its mirror image

- c. Contains a carbon atom with four different substituents
- d. Does not have a plane of symmetry
- e. Both b and d

28. (b) Which of the following is the definition of a meso compound ?

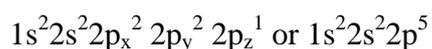
- a. A molecule with chirality centers which is chiral
- b. A molecule with chirality centers which is not chiral**
- c. A diastereomer with no chirality centers
- d. A chiral compound with more than one chirality center

29. (4) 一個封閉的保溫杯稱之為下列何者 ? (1) open system (2) closed system (3) adiabatic system (4) isolated system .

30. (1) 凡得瓦耳方程式通常又稱為什麼方程式 ? (1) Cubic Equation of State (2) Quadratic Equation (3) Square Equation of State (4) Polymorphous Equation .

31. (3) 所謂的 CAS No. 為何種意思 ? (1) 高等教育證書 (2) 化學吸收系列號碼 (3) 美國化學文摘登記號

32. (d) How many total valence electrons are represented in the following electron configuration ?



- (a) 1
- (b) 3
- (c) 5
- (d) 7**
- (e) 9

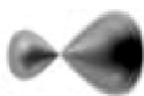
33. (c) Which of the following best represents the shape of a sp^3 hybrid orbital of carbon ?



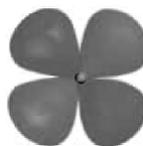
1



2



3



4

- a. 1
- b. 2
- c. 3
- d. 4

二、閱讀測驗題：

第 1 題：

Marcel Proust (1871-1922) is one of the greatest French writers. He is famous for his great book *À la Recherche du Temps Perdu*, which means “remembering the past.” In this book, Proust writes many stories of rich but unhappy people. These rich people think they should be well liked or loved. When they learn that they are not as popular as they think, they feel sad and try hard to be important in the eyes of others. That is why they always feel troubled and can never really enjoy their lives. In contrast to the lives of those people in his book, the last fifteen years of Proust’s life shows one can still find joy in hard times. During those years, he was very sick and had to stay in bed most of the time. But in his sickroom he found most joy in writing *À la Recherche du Temps Perdu* and ended up being a great writer because of the book.

1. (2) What can we learn about Proust from this reading?

- (1) He became poor and sick because of writing.
- (2) He got a lot of pleasure from writing in his later life.
- (3) He often wrote about how people get stronger in hard times.
- (4) He started writing *À la Recherche du Temps Perdu* when he was fifteen.

2. (2) Which is said about the rich people in Proust’s book?

- (1) They try to forget their past.
- (2) They try to get what they do not have.
- (3) They are sick and stay in bed most of the time.
- (4) They are rich enough to have their stories written.

3. (4) What does In contrast to mean?

- (1) Ahead of.

- (2) Worse than.
- (3) Important to.
- (4) Different from.

第 2 題：

Karen Finley was born in the U.S. in 1956. When she was only fourteen, she became interested in performing. She graduated from a performing arts school in 1981 and then began to perform in theaters. In her performances, she showed people some of the problems in the world. Karen's The Constant State of Desire was first performed at The Kitchen in New York City in 1986. In this performance she wanted people to notice some of the difficult experiences women have because of men. It soon became controversial. Many people did not feel comfortable with the performance. They thought that Karen hated men too much and was out of control. She was strongly criticized by the newspapers. But some other people thought differently and spoke for her. They said that they felt the experiences Karen showed in this performance were true to life. Karen hoped that people would think about the sad stories that happen every day. She believed people would understand her and learn some lessons if they could "read" her performances more carefully.

1. (1)According to the reading, what might "The Kitchen" be?
 - (1) A theater
 - (2) A restaurant
 - (3) A newspaper.
 - (4) A performance

2. (1)According to the reading, why would *The Constant State of Desire* be controversial?
 - (1) It seriously criticized men
 - (2) Karen was not well prepared
 - (3) The women who performed with Karen were out of control
 - (4) Karen said something bad about newspapers during the performance

3. (3)What did Karen Finley want to do by performing?
 - (1) To make more friends.
 - (2) To become a superstar.
 - (3) To show people her ideas.
 - (4) To make money for poor women

第 3 題：

One evening, my dad asked me to buy some bread for dinner. It was dark and cold outside. I rode a bike to a store near my school. When I left the store, it got even darker, so I got on my bike right away. Then I found a woman in a white dress riding a motorcycle after me. She followed me for a

long time. I rode very fast and started to cry for help, but no one was there. I was too scared and too tired to ride any faster. At last, I gave up. The woman stopped in front of me and said, "Why were you riding so fast, Ken? It's dangerous!" I looked at the woman. "Oh! It's you, Mom! You really scared me. Dad said you wouldn't be back for dinner tonight!"

1. (2)Why did Ken go out that night?

- (1) To ride a bike.
- (2) To buy some food.
- (3) To go to cram school.
- (4) To look for his mother.

2. (2)Why was Ken riding fast on his way home?

- (1) He was hungry
- (2) Someone was following him.
- (3) It was getting darker and colder
- (4) His father asked him to go home soon

3. (4)Who was the motorcyclist?

- (1) A stranger
- (2) A policeman.
- (3) Ken's father
- (4) Ken's mother.

第 4 題 :

Welcome to your favorite radio show, "Music Wonderland"! March 21 will be the 300th birthday of Bach, the Father of Music. So this month we are going to have several special programs on this great man of music. Johann Sebastian Bach was born in Germany in 1685. During his lifetime, Bach wrote a lot of music for the church and for his students, but he himself did not keep his own works carefully. Luckily, his second wife copied them and saved them for him. So today we can still remember Bach through his music. Bach married twice in his life and had 20 children altogether. He was a man who loved his family very much. When his first wife planned to learn the piano, he wrote two music books for her. And he also wrote music for one of his daughters to tell her that too much coffee was bad for her health. I am now going to play a song for you from this interesting Coffee Cantata. And we will hear more about Bach after the song.

1. (4)So far, what is this radio show mainly about?

- (1) The Bach family history
- (2) Bach's great church music
- (3) Ways to learn Bach's music
- (4) Stories about Bach and his music.

2. (1) Why is Bach's second wife important to his music?

- (1) She helped Bach keep his works.
- (2) Many of Bach's works were written for her
- (3) She gave Bach a lot of good ideas about music
- (4) Her money helped Bach concentrate on writing music.

3. (3) Why did Bach write the *Coffee Cantata*?

- (1) To celebrate his birthday.
- (2) To show people his love of coffee
- (3) To tell his child not to drink so much coffee
- (4) To create a new kind of music for the church

第 5 題：

Heartland is a beautiful town in which cars and motorcycles are not allowed. The town is famous for its blue sky and fresh air. The weather there is nice and warm all the year, so trees and flowers grow well in all seasons. I went to Heartland last month and stayed there for five days. Every morning I woke up to the songs of birds. Then I would take a walk or ride a bicycle along the country roads. Orchards and gardens were everywhere. Flower shops and coffee houses were also on the way. Every night from my window I could see bright stars in the sky, and I would go to sleep with the smell of grass. The five-day holiday in Heartland gave me a lot of surprises. I hope I can go there again some day and spend more time there.

1. (2) Why did the writer go to Heartland?

- (1) To build a house
- (2) To spend a vacation
- (3) To work as a farmer
- (4) To give a surprise party.

2. (1) If the writer is talking to friends about Heartland, what will she/he say?

- (1) The sky in Heartland is very clear
- (2) Life in Heartland is fast and modern
- (3) Taxis in Heartland are very convenient
- (4) The Christmas snow in Heartland is beautiful.

3. (3) Which is most UNLIKELY to be found in Heartland?

- (1) A shop that fixes bicycles
- (2) A market that sells fresh fruit.
- (3) A factory that makes motorcycles.
- (4) A coffee shop that also sells flowers