2018학년도 재외국민과 외국인 특별전형 필기고사 문제

- 자연계열 -

모집단위	
수험번호	
성명	

※ 감독자의 지시가 있을 때까지 다음 장으로 넘기지 마시오.

[1~10] 다음 글의 밑줄 친 부분에 들어갈 가장 적절한 것은? (각 5점)

1. In 2008, a mother donated her son's liver to Michael Carraway, an 11-year-old boy who needed a liver transplant. When Michael got better, he wanted to express his _____ by giving back to his community in honor of his donor.

① strategy　　　　② gratitude
③ tendency　　　　④ prejudice

2. The unlawful shipping of e-waste in recent decades can potentially return the pollutants to developed nations. The _____ materials that are produced in the process of disposing e-waste are polluting the world's atmosphere, oceans, soil, and food supply every year.

① poisonous　　　　② ambiguous
③ nutritious　　　　④ beneficial

3. Effective translators aim to capture the _____ message of a book because a word-for-word translation of the original rarely conveys the intended meaning and often causes misunderstandings.

① distorted　　　　② literal
③ ridiculous　　　　④ overall

4. Despite the burden that euphemisms pose on learners of English, it is clear that euphemisms are tools which allow us to talk about all kinds of things in appropriate and polite ways. As old euphemisms fall out of use and new ones come into use, English is ever _____ to handle every situation, pleasant or unpleasant.

① thawing　　　　② migrating
③ dwindling　　　　④ evolving

5. Smiles are infectious, as is positivity. The sound of roaring laughter is far more _____ than any cough, sniffle, or sneeze. When laughter is shared, it binds people together and increases happiness and intimacy.

① opaque　　　　② contagious
③ inherent　　　　④ authentic

6. It may seem obvious, but it is easier to tell a joke when it sounds funny to you. "People laugh at things they can understand and _____."

① major in　　　　② look back on
③ escape from　　　　④ relate to

7. Researchers have discovered some of the reasons for shyness. Shyness is, to some extent, _____. This means that some people, about fifteen percent of us, are shy from birth. Even before being born, the hearts of shy children beat much faster than the hearts of other children.

① genetic　　　　② superior
③ experimental　　　　④ influential

8. Biscotti, an Italian cookie, means "twice-baked." Biscotti are first baked in a loaf and then sliced and toasted again. This second trip to the oven draws off moisture, and _____ a crisp, dry texture and a long shelf life.

① pays out　　　　② results in
③ turns down　　　　④ finishes off

9. Create the habit of comparing yourself to yourself. You will feel good about yourself as you see how much you have grown, what you have achieved, and _____ toward your goals.

① what progress you have done

② what progress has been made

③ what progress you have made

④ what progress has been done

10. The teen years can be a transitional period. The body undergoes extreme changes, and the teenager begins _____ adult roles and responsibilities.

① taking on   ② disposing of

③ looking after   ④ registering for

[11~12] 다음 글의 밑줄 친 부분 중 어법상 틀린 것은? (각 5점)

11.

The "salad bowl" is the idea ① that many different cultures come together like a salad. ② Unlike a melting pot, the cultures in a salad bowl each keep their original qualities. People ③ believe in the salad bowl model say that differences among cultures should be treasured ④ to create a society that emphasizes diversity and understanding.

12.

Paper comes from trees – lots and lots of trees. About 14 billion trees are cut down annually to produce the 10 billion paper bags Americans consume each year. ① Manufacturing paper bags not only destroys forests, major absorbers of greenhouse gases, but it also uses other resources and causes pollution. Trees are cut and dried by electric machines and then cooked with chemicals to ② become pulp. Thousands of gallons of fresh water and hazardous chemicals are ③ used every time the pulp is washed and bleached. According to some studies, the production of paper bags ④ take four times more energy than plastic bag production.

[13~15] 다음 글의 밑줄 친 (A), (B), (C)에 가장 적절한 것은? (각 5점)

13.

Our room where we worked was very hot because the windows had to be closed to protect the quality of the wool. It was also a dimly lit room with only two light bulbs (A) hang / hanging over our heads. If we talked to each other, then we were punished for not (B) concentrated / concentrating on the work. We were also (C) beaten / beating if we complained about how we were treated.

	(A)	(B)	(C)
①	hanging	concentrating	beaten
②	hang	concentrating	beating
③	hang	concentrated	beaten
④	hanging	concentrated	beating

14.

The learning pyramid suggests that different learning methods bring different results. (A) As such / In other words, people with more active learning styles showed that they remember what they had learned better for a longer time. (B) As a result / For example, students who only listened to a lecture or read something remembered 5% or 10% of the information respectively. (C) On the other hand / Otherwise, those who even taught others by themselves later proved that they acquired the newly obtained information to 90% of it.

	(A)	(B)	(C)
①	In other words	As a result	Otherwise
②	As such	For example	Otherwise
③	In other words	For example	On the other hand
④	As such	As a result	On the other hand

15.

For thousands of years, there existed an ancient road, (A) treading / trodden by human feet and horse hooves, which wound through the mountains of southwest China and Tibet. The road began in southwest China's Sichuan Region and stretched across more than 4,000 kilometers. Along the unpaved and often rugged road, tea, salt, and sugar flowed into Tibet, (B) while / during horses, cows, furs, musk, and other local products poured out. The road also promoted exchanges in culture and religion, and ethnic migration, just as the Silk Road (C) did / was elsewhere. Also like the Silk Road, the importance of this route faded at the dawn of the modern world. The route played a very important historic role in the development of China and Tibet. Various Chinese as well as Tibetan ethnic societies met, fused, and developed along the historic road.

	(A)	(B)	(C)
①	trodden	while	did
②	treading	while	was
③	treading	during	did
④	trodden	during	was

[16~17] 다음 글에서 전체 흐름과 관계 없는 문장은? (각 5점)

16.

To make something you perceive part of your long-term memory, you have to pay conscious attention to it. To keep your attention focused, you have to avoid multitasking. ① If you listen to music, send text messages or watch TV out of the corner of your eye while you're studying, you may lose your focus and lower your learning efficiency. ② It is also important to get enough sleep when you want to boost your ability to learn. ③ The brain works better when your conscious attention is strictly focused on one thing at a time. ④ If you develop the habit of quiet attentiveness when you study, you'll find that you learn more quickly, and therefore have more time left to do the other things you want to do.

17.

The hybrid trend is closely tied to globalization. ① As the world is becoming one global village, people from different cultures increasingly interact with one another. ② Behind globalization lies a development of new media and technology. ③ Consequently, there rise explosive demands for means of mass-transportation. ④ People communicate faster with more people through social networking sites. In a network of constant interaction and communication, people tend to develop new ideas to create something unique by combining what they have with what others have.

18. 다음 글의 제목으로 가장 적절한 것은? (5점)

Categories are denoted by nouns. Relationships, on the other hand, usually involve a verb. Therefore, verbs are more important in Asian languages than in English. The manner in which people ask someone whether they would like more tea to drink exemplifies this distinction. In Asian languages one asks, "Drink more?" In English, however, one asks "More tea?" To Asians, it is perfectly obvious that it is tea that one is talking about drinking more of, so to mention the word tea would be unnecessary. To Westerners, it is perfectly obvious that one is talking about drinking the tea, so it would be rather strange for the question to refer to drinking.

Asians and Westerners have used very different systems of thought for thousands of years. While Asians pay more attention to the relationship between objects, Westerners are concerned with categorizing objects. These distinctive organizational strategies are reflected in each culture and how they interact with one another. Understanding this is essential as societies become increasingly diverse.

① Diversity of Tea Drinking Cultures

② Impacts of Language Barriers on Societies

③ Difference in Cultural Perspectives on Objects

④ Importance of Distinguishing Parts of Speech

19. 다음 글의 흐름으로 보아, 주어진 문장이 들어가기에 가장 적절한 곳은? (5점)

> Furthermore, traveling can be an educational experience.

Today, more people are traveling than ever before. They hit the road to take advantage of what traveling has to offer. First of all, traveling refreshes the body and mind. When we travel we are taking a break from our daily schedules. ① We forget about all our worries for a while, and we return home feeling truly refreshed and ready to handle old problems in a fresh and creative ways. ② We not only discover new places, but new cultures and peoples. ③ We get to see how people from other cultures live their daily lives. ④ When we don't know about other countries' customs and beliefs, we can fear or avoid the people who live there.

20. 다음 글의 내용과 가장 일치하는 것은? (5점)

Acting based on stereotypes or prejudices, people practice discrimination. Discrimination is the unequal treatment of a person or a group. It may mean not allowing them to participate in certain activities or limiting their access to work. In other words, it's denying them something they have a right to. Throughout history, various groups of people, such as women, immigrants and racial minorities, have been discriminated against, and they often still are. Racism is the mistreatment of members of another race. It is one of the oldest and worst forms of discrimination. One famous historical example of racism was the treatment of Jews by the Nazis during World War Ⅱ. In today's world, it's becoming more and more common for people of different races to live and work together, so we need to learn how to respect each other's rights. In other words, we need to learn tolerance.

① It is illogical to claim that everyone has equal rights.

② Racial discrimination ended after the maltreatment of Jews by the Nazis.

③ We usually despise people because we are afraid of them.

④ It is crucial to learn how to co-exist with people who are not like us.

21. 이차방정식 $x^2 + px + q = 0$의 두 근을 α, β라 할 때, $x^2 + qx + p = 0$의 두 근은 $\alpha + \beta$, $\alpha\beta$이다. 이때, pq의 값은? (단, $p \neq 0, q \neq 0$) (5점)

   ① 2　　　② 1　　　③ -1　　　④ -2

22. 이차함수 $y = x^2 + 1$의 그래프 위의 점 (a,b)와 직선 $x - y - 1 = 0$ 사이의 거리가 최소가 될 때, $a + b$의 값은? (5점)

   ① $\dfrac{1}{4}$　　② $\dfrac{3}{4}$　　③ $\dfrac{5}{4}$　　④ $\dfrac{7}{4}$

23. 실수 전체의 집합에서 정의되는 함수 f가 다음을 만족시킨다.

(가) $f(x) > 0$ (나) $f(1) = 1$ (다) $2f(x+y) = f(x)f(y)$

   이때, $f\left(\dfrac{1}{4}\right)$의 값은? (5점)

   ① $\sqrt[3]{4}$　　② $\sqrt{2}$　　③ 2　　④ $\sqrt[4]{8}$

24. 함수 $y = \dfrac{x-1}{ax+b}$의 그래프가 점 $\left(2, \dfrac{1}{2}\right)$을 지나고, x축에 평행한 점근선이 $y = 2$일 때, $a + b$의 값은? (5점)

   ① $\dfrac{3}{2}$　　② $\dfrac{1}{2}$　　③ $-\dfrac{1}{2}$　　④ $-\dfrac{3}{2}$

25. 전체집합 $U = \{1,2,3,4,5\}$의 두 부분집합 A, B에 대하여 $A = \{4,5\}$, $(A^c \cup B) \cap A = \{4\}$를 만족시키는 집합 B의 개수는? (5점)

   ① 4　　　② 8　　　③ 12　　　④ 16

26. 두 실수 a, b가 $2^{a+b} = 9$, $3^{a-b} = 5$를 만족시킬 때, $2^{a^2 - b^2}$의 값은? (5점)

   ① 16　　　② 25　　　③ 30　　　④ 36

27. 함수 $f(x) = x^2 - x - 1$에 대하여

   $$\int_0^7 f(x)dx - \int_0^{-2} f(x)dx - \int_{-1}^7 f(x)dx$$

   의 값은? (5점)

   ① $\dfrac{13}{6}$　　② $\dfrac{15}{6}$　　③ $\dfrac{17}{6}$　　④ $\dfrac{19}{6}$

28. 곡선 $y = x^3 + px + q$ 위의 점 $(1, -2)$에서의 접선의 기울기가 5가 되도록 하는 상수 p, q에 대하여 $p + q$의 값은? (7점)

   ① -7　　② -3　　③ 1　　④ 5

29. 급수 $\displaystyle\sum_{n=1}^\infty \left(5 + \dfrac{an^2 + bn + 3}{2n - 1}\right)$이 수렴할 때, $a - b$의 값은? (7점)

   ① -5　　② 0　　③ 10　　④ 15

30. 함수 $y = -\dfrac{1}{3}x^3 + x^2 - b^2 x$가 $x = a$에서 극값을 가질 때, 순서쌍 (a,b)의 개수는? (단, a,b는 정수) (7점)

   ① 1　　　② 2　　　③ 3　　　④ 4

31. 1부터 9까지의 9개의 자연수 중에서 서로 다른 3개의 수를 택할 때, 가장 큰 수가 7일 확률은? (7점)

   ① $\dfrac{5}{28}$　　② $\dfrac{7}{28}$　　③ $\dfrac{1}{7}$　　④ $\dfrac{1}{5}$

32. 실수 전체의 집합에서 연속인 함수 f가 모든 실수 x에 대하여 다음을 만족시킨다.

> (가) $(x^2 - x - 2)f(x) = ax^3 + bx^2 + cx + d$
>   (단, a, b, c, d는 상수)
> (나) $\lim\limits_{x \to \infty} f(x) = 4$

이때, $f(-1) + f(2)$의 값은? (7점)

① 1　　　　② 2　　　　③ 4　　　　④ 8

33. 수열 $2, \log_4 a, \log_a 2, \cdots$ 가 등차수열일 때, 공차의 값은? (단, $a > 1$) (10점)

① $\dfrac{3 + \sqrt{2}}{2}$　　　　　② $\dfrac{3 - \sqrt{2}}{2}$

③ $\dfrac{-3 + \sqrt{2}}{2}$　　　　④ $\dfrac{-3 - \sqrt{2}}{2}$

34. 실수 전체의 집합에서 미분가능한 함수 f가 다음을 만족시킬 때, $f'(1)$의 값은? (10점)

$$\lim_{x \to 1} \frac{\displaystyle\int_1^x f(t)\,dt - f(x)}{x^3 - 1} = 1$$

① -3　　　② -1　　　③ 1　　　④ 3

35. 한 개의 주사위를 n번 던져서 3의 눈이 나오는 횟수를 확률변수 X라 하자. X의 확률질량함수가 다음을 만족시킬 때, $\mathrm{E}(3X^2 - 1)$의 값은? (10점)
$$\mathrm{P}(X = n-1) = 60\,\mathrm{P}(X = n)$$

① 7　　　② 10　　　③ 13　　　④ 16

※ 21 ~ 27번 : 각 5점
　 28 ~ 32번 : 각 7점
　 33 ~ 35번 : 각 10점

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- 자연계열 -

과목	영어		과목	수학	
문제번호	정답	배점	문제번호	정답	배점
1	②		21	①	
2	①		22	④	
3	④		23	④	
4	④		24	①	각 5점
5	②		25	②	
6	④		26	②	
7	①		27	③	
8	②		28	②	
9	③		29	③	
10	①	각 5점	30	②	각 7점
11	③		31	①	
12	④		32	④	
13	①		33	③	
14	③		34	①	각 10점
15	①		35	④	
16	②				
17	③				
18	③				
19	②				
20	④				