



# 2025학년도 한국외국어대학교 편입학전형 필답고사 문제지 (T1-2)

A형

출제문항: 영어 25문항, 수학 20문항(90분)

| 지망학부(과) | 수험번호 | 성명 |
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|         |      |    |

[배점 1-8: 각 2점; 9-10: 각 3점; 11-12: 각 4점; 13-20: 각 5점; 21-25: 각 6점. 총 100점]

[배점 26-29: 각 4점; 30-31: 각 4.7점; 32: 4.8점; 33-38: 각 5점; 39: 5.2점; 40-41: 각 5.3점; 42-45: 각 6점. 총 100점]

[1~8: 2 points each]

[1-3] Choose the one that best completes the sentence.

1. Despite evidence to the contrary, he remained \_\_\_\_\_ in his beliefs.

- ① obdurate                      ② onerous  
③ vestigial                      ④ tantamount

2. We wanted a buzzy atmosphere that represented that kind of vibrant, \_\_\_\_\_ nature.

- ① haughty                      ② rancid  
③ myopic                      ④ clamorous

3. In an attempt to lure customers, companies go to great lengths to \_\_\_\_\_ their green policies.

- ① tout                      ② denude  
③ censure                      ④ balk

[4-6] Choose the one that best replaces the underlined word.

4. Despite his averse attitude toward the new project, he ultimately accepted the responsibility due to the urgency of the situation.

- ① vivacious                      ② effusive  
③ mellifluous                      ④ antagonistic

5. That the songs don't match the story structurally is probably an insuperable problem.

- ① contemptuous                      ② impassable  
③ stochastic                      ④ impeccable

6. You must be extremely perspicuous in everything you say; otherwise, instead of entertaining, you only tire your audience.

- ① indistinct                      ② momentous  
③ ravenous                      ④ lucid

[7-8] Choose the one that is closest in meaning to the CONTEXTUAL meaning of the underlined word.

7. The old quarter of the city is full of historical landmarks that draw tourists from around the world.

- ① one-fourth                      ② accommodation  
③ district                      ④ mercy

8. The case was widely discussed, with everyone eagerly awaiting the final verdict.

- ① container                      ② lawsuit  
③ reason                      ④ specimen

[9~10: 3 points each]

[9] Choose the one that is closest in meaning to the given sentence.

9. It seemed I could hardly make a wrong move.

- ① I found that all my moves were wrong.  
② Moving the wrong way seemed hard.  
③ Hardly moving was what seemed correct.  
④ It was as if I could do no wrong.

[10] Choose the one that best completes the sentence.

10. My friend reproved \_\_\_\_\_ my dirty dishes in the sink.

- ① me for not washing                      ② for me not washing  
③ me not washing for                      ④ for not me washing

[11~12: 4 points each]

[11] Choose the one that makes the sentence grammatically INCORRECT.

11. The Beatitudes ①are counter-cultural, because  
②they correct and ③challenge to the ways  
④in which we understand happiness.

[12] Choose the one that is **grammatically INCORRECT**.

12.

- ① Never before we have seen such a dramatic shift in public opinion.
- ② Not every teacher has adopted the new teaching methods.
- ③ Only recently has anyone tried to understand how fingers work in pitching.
- ④ Rarely have I encountered such a challenging problem in my career.

[13~20: 5 points each]

[13-25] Read the following passages and answer the questions.

[13-14] For many of us, mornings are a real struggle—but what if there was a way to make waking up feel a little more natural and less harsh? Unlike traditional alarms that wake you up with sudden beeping or music, a sunrise alarm clock tries to simulate the natural sunrise by slowly increasing the light in your room. The idea is to help your body regulate its natural sleep-wake cycle, so you wake up gradually and feel more refreshed and ready to start the day. The main feature of a sunrise alarm clock is that it creates a soft, warm glow and gradually gets brighter over the course of 20 - 40 minutes until it reaches its brightest point at your waking time. It's designed to be like a natural sunrise and gently signal to your brain that it's time to wake up. Light plays a major role in regulating your body's sleep-wake cycle—your “circadian rhythm.” When it's dark, your body produces melatonin, the hormone that makes you feel sleepy. In the morning, exposure to light naturally reduces melatonin production and increases the release of cortisol—a hormone that helps you feel awake and alert. A sunrise alarm clock aims to mimic this natural process, allowing your body to wake up more smoothly. This might make mornings feel less jarring and help reduce that groggy feeling often caused by sudden loud alarms.

13. Which of the following is the best title for the passage?

- ① The Science Behind Loud Alarm Clocks
- ② Hormones Make Your Mornings More Stressful
- ③ The Natural Process of Getting Up Quickly
- ④ Waking Up More Naturally with Light

14. According to the passage, which of the following is true?

- ① Sunrise alarm clocks make a loud beeping sound to wake you.
- ② Sunrise alarm clocks help regulate your body's sleep-wake cycle.
- ③ Cortisol is the hormone that makes you feel sleepy.
- ④ Sudden exposure to light will help your body wake up more smoothly.

[15-16] On a train ride from New York to Connecticut last fall, my colleague Amanda Morris and her mother were having a conversation in American Sign Language (ASL). A man sitting near them saw them signing to each other and decided to join their conversation. Like Amanda, he was a child of deaf adults who grew up using ASL at home and speaking English elsewhere. And he noticed a trait of Amanda's: She signed like somebody who was much older than she was. He began gently teasing her about it, saying she was using signs that had fallen out of fashion. He had gone through a similar experience, he said, when he went through training to become an interpreter. During that training, he learned that some of his signs—ones he had learned from his parents—were out of date. The experience inspired Amanda, who is hard of hearing, to take an ASL class to learn more up-to-date signs, and she noticed the same pattern. “I saw a lot of differences between how my young deaf teacher signed and how my parents sign,” she told me. An old sign for computer, to take one example, involved large circular motions to evoke the magnetic tapes that once stored data; a new sign combines the letter C with a small circular motion that's a throwback to the old sign.

15. What is the major topic of the passage?

- ① The generation gap between the old and the young
- ② Up-to-date training of sign language interpreters
- ③ Different lexical choices between English and ASL
- ④ Language change in American Sign Language

16. According to the passage, which of the following is true?

- ① Amanda has taken an ASL class to be an interpreter.
- ② Amanda was teased because her ASL was old-fashioned.
- ③ The male signer cannot speak as his parents are both deaf.
- ④ A small circular motion with the letter C is the old sign for computer in ASL.

[17-18] One might ask, “Why is sugar in almost all processed foods?” Essentially, sugar is a vehicle that makes you able to eat more by inhibiting the part of the brain that controls satiety. So, if sugar is added to something which does not normally contain it, e.g., salad dressing, pasta sauce, or bread, people will tend to eat more of that something than they normally would if sugar were not present. Therefore, having sugar as an ingredient is a reliable way of getting people to eat more, and buy more, of something than they otherwise would, which generates more profits for the maker. The problem with these sugar-based profits is that excessive consumption of sugar has been linked to diabetes, obesity, and Alzheimer’s disease. While sugar is not classified as a drug in the traditional sense, scientific evidence suggests that its effects on the brain’s reward system and dopamine receptors are similar to those of addictive drugs. The American Psychiatric Association (APA) considers something addictive if a person can build up a tolerance to it and experiences withdrawal when not using it. Although sugar is not included in the APA’s list of addictive substances, some argue that sugar should be, and numerous countries have moved to restrict its consumption by implementing taxes or changing dietary guidelines.

17. What is the major topic of the passage?

- ① The problems of overconsumption of processed foods
- ② How overeating leads to obesity and diabetes
- ③ The APA’s failure to classify sugar as an addictive drug
- ④ Why sugar is added to food and the resulting problems

18. According to the passage, which of the following is **NOT** true?

- ① The effect of sugar on dopamine receptors resembles that of addictive drugs.
- ② Sugar boosts the control of satiety in the brain.
- ③ Many nations are making efforts to curb the use of sugar.
- ④ Adding sugar to food often leads to more sales of that food.

[19-20] Anyone who’s had a shady oyster or a mushroom soup that didn’t go down well remembers the ominous queasiness heralding impending bad times. Bacteria release toxins that start the body’s process of speedily evacuating the contents of the stomach. It’s a protective mechanism of sorts—getting rid of the invaders en masse is probably helpful in the long term, even if it’s unpleasant in the short. But it has remained something of a mystery how the brain gets the alarm signal, then sends another one to tell the stomach to vomit. Your next bout of food poisoning isn’t the only reason to understand this particular neural pathway. Figuring out how to (A)\_\_\_\_\_ it could be helpful for people who develop nausea caused by chemotherapy medication and other drugs. As if fighting cancer isn’t painful and scary enough, patients are often so turned off by food that keeping their weight up becomes a major struggle. In a new study, researchers report that a bacterial toxin and a chemo medication both set in motion a cascade of similar neural messages that cause queasiness.

19. Which of the following best fits into (A)?

- ① requite
- ② maintain
- ③ counter
- ④ catalyze

20. According to the passage, which of the following can be inferred?

- ① Shady oysters and some mushroom soups cause stomach problems.
- ② Eliminating bacteria from one’s stomach involves conscious thinking.
- ③ Gaining weight is a result of taking too much medicine.
- ④ Chemo medication is comprised of bacterial toxins.

[21~25: 6 points each]

[21-22] Doppelgängers share strikingly similar physical characteristics—they look so alike that, at times, these two unrelated people could easily pass for twins. Now, new research suggests that (A)doppelgängers have more in common than meets the eye. It may seem obvious that people with similar facial features would also have some of the same DNA, but no one had scientifically proven this, until now. Thanks to the internet, it's now easier than ever for researchers to track down and study doppelgängers. To understand what was going on at the genetic level among look-alikes, scientists collaborated with the Canadian photographer François Brunelle. Since 1999, Brunelle has been traveling around the world to capture intimate portraits of strangers who look nearly identical to one another for his “I’m not a look-alike!” project. Researchers asked 32 pairs of Brunelle’s models to answer questions about their lifestyles and submit samples of their DNA. Using facial recognition software, the scientists analyzed headshots of the so-called “human doubles” and computed a score to quantify similarities among their faces. They found that 9 of the 16 very similar-looking pairs shared many common genetic variations known as single nucleotide polymorphisms. These pairs are therefore like virtual twins.

21. Which of the following is the best title for the passage?

- ① Look-Alikes Are Actually Not Doppelgängers
- ② Doppelgängers Are Now Scientifically Proven
- ③ Virtual Twins Turned Out to Be Doppelgängers
- ④ Doppelgängers Do Not Have to Share Physical Characteristics

22. Which of the following is closest in meaning to (A)?

- ① Doppelgängers share more similarities than what's visible at first glance.
- ② Doppelgängers commonly consider meeting in person.
- ③ Doppelgängers look alike but are nothing alike in other ways.
- ④ Doppelgängers' eyes look more similar than other features.

[23-25] On August 1, 2024, the European Union's Artificial Intelligence Act (AI Act) came into effect. This act is a major step towards regulating AI systems within the EU. It has two aims: to foster AI development and to mitigate potential risks to citizens' health, safety, and fundamental rights. A predominant feature of the AI Act is its risk-based classification of AI systems. “Minimal Risk” systems, such as spam filters and AI-enabled video games, have no new obligations under the AI Act. AI systems classified as

having “Specific Transparency Risk,” such as chatbots, must now explicitly inform users they are interacting with a machine. Also, some AI-generated content must be labeled as such. “High Risk” systems, such as medical software or AI systems used for job recruitment, must comply with strict new requirements, including risk-mitigating systems, high-quality datasets, and human oversight. A final category identified by the Act is “Prohibited AI” systems. These are systems that pose unacceptable risks. Systems banned by the EU include those that cause significant harm by (A)deploying subliminal or manipulative techniques to distort behavior and impair informed decision-making. The Act includes provisions for General Purpose AI (GPAI) models. All GPAI model providers must now provide technical documentation, comply with the Copyright Directive, and publish a summary about the content used for training. Providers of GPAI models that present a systemic risk must also conduct model evaluations, adversarial testing, track and report serious incidents, and ensure cybersecurity protections. By developing a strong regulatory framework based on human rights and fundamental values, and establishing clear requirements for AI systems, the Act aims to protect EU citizens' fundamental rights while fostering innovation and economic growth.

23. Which of the following is the best title for the passage?

- ① The Future of Regulation of Artificial Intelligence
- ② Transparency Risks and Labeling Requirements in the AI Act
- ③ The Role of AI in Modern Video Games from a European Perspective
- ④ The EU's Artificial Intelligence Act and Its Specifics

24. According to the passage, which of the following is **NOT** true?

- ① Users of systems with “Specific Transparency Risk” must be made aware they are interacting with a machine.
- ② A summary of the content used for training GPAI models must be disclosed.
- ③ The AI Act introduces new requirements for “Minimal Risk” systems.
- ④ The AI Act requires “High Risk” systems to have human oversight and high-quality datasets.

25. Which of the following is closest in meaning to (A)?

- ① using overtly manipulative techniques to guide behavior and inform judgments
- ② boosting knowledge-based decision-making through underhanded techniques
- ③ utilizing cunning or hidden methods to alter behavior and hinder sound decision-making
- ④ implementing subtle strategies to manipulate the information system

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39: 5.2점; 40-41: 각 5.3점; 42-45: 각 6점. 총 100점]

26.  $0 \leq \theta \leq 2\pi$  일 때, 이차방정식

$$2x^2 - (2\cos\theta)x + \sin\theta = 0$$

이 오직 하나의 실근을 가지도록 하는 모든  $\theta$ 의 값의 합은? [4점]

①  $\frac{\pi}{2}$

②  $\pi$

③  $2\pi$

④  $3\pi$

⑤  $4\pi$

27. 자연수  $n$ 에 대하여 좌표평면 위의 점  $(-n, 0)$ 에서 포물선  $y^2 = 4x$ 에 그은 두 접선이 포물선과 만나는 점을 각각 P, Q라 하자. 선분  $\overline{PQ}$ 의 길이  $l$ 이  $5 \leq l \leq 10$ 을 만족시키는  $n$ 의 개수는? [4점]

① 3

② 4

③ 5

④ 6

⑤ 7

28. 밑면이 변의 길이가  $a$ 인 정사각형이고 높이가  $b$ 인 직육면체 모양의 뚜껑이 없는 용기를 만들고자 한다. 이 용기의 겉넓이가 24이면서 부피가 최대가 될 때,  $a^2 + b^2$ 의 값은? [4점]

① 4

② 6

③ 8

④ 10

⑤ 12

29. 좌표평면에서 원  $x^2 + y^2 = 4$ 의 내부나 경계 위에 있고  $x$ 좌표와  $y$ 좌표가 모두 정수인 점 중에서 서로 다른 두 점을 임의로 선택할 때, 두 점 사이의 거리가  $\sqrt{2}$  이하일 확률은? [4점]

①  $\frac{12}{39}$

②  $\frac{14}{39}$

③  $\frac{16}{39}$

④  $\frac{9}{13}$

⑤  $\frac{20}{39}$

30. 명중률이  $\frac{2}{3}$ 인 사수가 활을 쏘아서 풍선 2개를 터뜨리고자 한다.  
이 사수가 활을 쏘는 시행을 할 때, 풍선 2개를 터뜨리는 시행 횟수가 5 이상이 될 확률은? (단, 한 번의 시행에서 풍선은 1개만 터질 수 있고, 사수는 풍선 2개를 터뜨릴 때까지 시행을 계속한다.) [4.7점]

- ①  $\frac{2}{27}$                       ②  $\frac{1}{9}$   
③  $\frac{4}{27}$                       ④  $\frac{5}{27}$   
⑤  $\frac{2}{9}$

31. 실수  $a(a > 1)$ ,  $b$ 에 대하여 함수

$$f(x) = \begin{cases} \sqrt{x-1}, & x \leq a \\ \lim_{n \rightarrow \infty} \frac{x^{n+1} + bx^n}{4x^n + 3}, & x > a \end{cases}$$

가  $x = a$ 에서 미분가능할 때,  $ab$ 의 값은? [4.7점]

- ① 15                      ② 18  
③ 21                      ④ 24  
⑤ 27

32. 삼차방정식  $x^3 - 3nx^2 + 64 = 0$ 의 2보다 큰 서로 다른 두 실근의 개수가 2가 되도록 하는 모든 자연수  $n$ 의 값의 합은? [4.8점]

- ① 3                      ② 6  
③ 9                      ④ 12  
⑤ 15

33.  $0 \leq x \leq \frac{\pi}{2}$ 에서 정의된 함수  $f(x)$ 와  $f(x)$ 의 역함수  $g(x)$ 가

$$g(3f(x) + 2\cos 2x) = x$$

를 만족시킬 때,  $\lim_{h \rightarrow 0} \frac{4g(2h) - \pi}{h}$ 의 값은? [5점]

- ① -4                      ② -2  
③ 1                      ④ 2  
⑤ 4

34. 좌표평면 위를 움직이는 점 P의 시각  $t$  ( $\frac{\pi}{4} \leq t \leq \frac{3\pi}{4}$ )에서의 위치  $(x, y)$ 가  $x = \cos t + \ln\left(\tan \frac{1}{2}t\right)$ ,  $y = \sin t$  이다. 시각  $t = \frac{\pi}{4}$ 에서  $t = \frac{\pi}{2}$ 까지 점 P가 움직인 거리는? [5점]

- ①  $\frac{1}{2}\ln 2$                       ②  $\ln 2$   
 ③  $\frac{3}{2}\ln 2$                       ④  $2\ln 2$   
 ⑤  $\frac{5}{2}\ln 2$

35. 음함수의 식  $x = y^3 + y + 2$ 로 주어진 곡선  $y = f(x)$  ( $x \geq 0$ )과 그 곡선 위의 점  $(4, 1)$ 에서의 접선과  $x$ 축으로 둘러싸인 영역의 넓이는? [5점]

- ①  $\frac{7}{12}$                       ②  $\frac{2}{3}$   
 ③  $\frac{3}{4}$                       ④  $\frac{5}{6}$   
 ⑤  $\frac{11}{12}$

36. 어떤 A제품 품질 검사기는 정상제품 중에서 2%는 불량품으로, 불량품 중에서 5%는 정상제품으로 잘못 판정한다고 한다. 어느 공장에서 생산된 A제품 중에서 정상제품이 95%이고 불량품이 5%일 때, 이 검사기가 불량품으로 판정한 제품이 실제로는 정상제품일 확률은? [5점]

- ①  $\frac{2}{7}$                       ②  $\frac{9}{28}$   
 ③  $\frac{5}{14}$                       ④  $\frac{11}{28}$   
 ⑤  $\frac{3}{7}$

37.  $n \geq 3$ 인 자연수  $n$ 에 대하여 다항식  $(1+x)^n$ 의 전개식에서  $x^{n-3}$ 의 계수를  $a_n$ 이라 할 때,  $\lim_{n \rightarrow \infty} \left(\frac{a_n}{a_{n+1}}\right)^{2n}$ 의 값은? [5점]

- ①  $e^6$                       ②  $e^4$   
 ③ 1                      ④  $e^{-4}$   
 ⑤  $e^{-6}$

38. 이계도함수가 연속인 함수  $f(x)$ 가  $x > 0$ 일 때

$$\int_1^x (\ln x - \ln t) f''(t) dt = 3(x-1)^2$$

을 만족시키고,  $f(1) = f'(1) = 1$ 이다.  $f(2)$ 의 값은? [5점]

- ① 6                                  ② 7  
 ③ 8                                  ④ 9  
 ⑤ 10

39. 실수  $a, b$ 에 대하여  $\lim_{x \rightarrow e} \frac{(\ln x)^{\ln x} - a}{x - e} = b$  일 때,  $\frac{a}{b}$ 의 값은?

[5.2점]

- ①  $\frac{2}{e}$                                   ②  $\frac{1}{e}$   
 ③  $\frac{e}{2}$                                   ④  $e$   
 ⑤  $2e$

40. 실수  $a$ 에 대하여  $z = a + (2a+1)i$ 라 하자. 모든 실수  $a$ 에 대하여  $|z-k|$ 의 최솟값이  $\sqrt{5}$ 가 되도록 하는 모든 실수  $k$ 의 값의 곱은?

(단,  $i = \sqrt{-1}$ 이고, 복소수  $z$ 에 대하여  $|z| = \sqrt{z\bar{z}}$ 이다.) [5.3점]

- ① -12                                  ② -10  
 ③ -8                                  ④ -6  
 ⑤ -4

41. 한 개의 주사위를 던져서 2나 5가 나오는 사건을  $A$ 라 하자.

한 개의 주사위를 던지는 시행을  $n$ 번 반복할 때, 사건  $A$ 가 일어나는 횟수를 확률변수  $X$ 라 하자.  $E(X^2) = V(5X)$ 일 때, 자연수  $n$ 의 값은?  
 (단,  $E(X)$ 와  $V(X)$ 는 각각  $X$ 의 기댓값과 분산이다.) [5.3점]

- ① 6                                  ② 12  
 ③ 24                                  ④ 36  
 ⑤ 48

42. 수열  $\{a_n\}$ 이 모든 자연수  $n$ 에 대하여  $\sum_{k=1}^n 9^k a_k = 2^n + 3^n$ 을 만족시킬

때,  $\sum_{n=1}^{\infty} a_n$ 의 값은? [6점]

①  $\frac{2}{3}$

②  $\frac{44}{63}$

③  $\frac{46}{63}$

④  $\frac{16}{21}$

⑤  $\frac{50}{63}$

43. 모든 자연수  $n$ 에 대하여  $a_n = \frac{1}{n} \left( \sum_{k=1}^n \ln k \right) - \ln n$ 일 때,

$\lim_{n \rightarrow \infty} a_n$ 의 값은? [6점]

①  $-4$

②  $-2$

③  $-1$

④  $-\frac{1}{2}$

⑤  $-\frac{1}{4}$

44. 수열  $\{a_n\}$ 이

$$a_1 = 2, \quad 2na_{n+1} = (n+1)a_n \quad (n \geq 1)$$

을 만족시킬 때,  $\sum_{n=1}^{\infty} a_n$ 의 값은? [6점]

① 8

② 9

③ 10

④ 11

⑤ 12

45.  $x > 0$ 에서 정의된 함수  $f(x) = \int_0^{\infty} \sqrt{t} e^{-\sqrt{x}t} dt$ 에 대하여

$f'(1)$ 의 값은? [6점]

① 6

② 4

③ 2

④  $-4$

⑤  $-6$