

Письмова екзаменаційна робота з курсу “Іноземна мова за фахом”

Тип завдання	Кількість контрольних завдань	Кількість балів	Час виконання
Текст 1 за фахом або фрагменти текстів 1500 знаків (+- 10 %)	Тестове завдання на розуміння прочитаного (matching)	5	5
Текст 2 за фахом 1500 знаків (+- 10 %)	Тестове завдання на множинний вибір (Multiple Choice)	5	5
Текст 3 за фахом 1500 знаків (+- 10 %)	Тестове завдання на використання лексики (Use of English)	10	10
Граматичний блок	Тестове завдання на знання граматики англійської мови	20	10

Загальна сума балів за роботу 30.

Пам'ятайте вписувати свої остаточні відповіді в Таблицю Відповідей (ANSWER SHEET), яка надається після всіх завдань.

Текст 1. Тестове завдання на розуміння прочитаного (matching)

Заповніть пропуски 1–5 варіантами відповідей A–F. Один варіант є зайвим.

In 1904, a new mathematical challenge was posed by David Hilbert, a famous German mathematician. It was about proving **1**. For decades, scientists tried different methods, but the problem remained unsolved. Only in 2003, a Russian mathematician Grigori Perelman presented a solution, **2**. His work was based on the ideas of Richard Hamilton, who had developed the so-called Ricci flow. The solution immediately attracted attention, and soon Perelman was awarded the Fields Medal, **3**. However, he refused the prize, **4**. Perelman's refusal raised many discussions about **5**.

- A. the role of money and recognition in scientific life
- B. considered one of the greatest achievements in mathematics
- C. how geometry could describe the shape of space
- D. saying that he had already proved enough by his work
- E. which opened new perspectives for topology
- F. although it was highly unusual at that time

Текст 2. Тестове завдання на множинний вибір (Multiple Choice)

Прочитайте текст. На запитання (6–10) виберіть правильну відповідь (A, B, C або D).

Mathematics and Artificial Intelligence

Artificial Intelligence (AI) is developing rapidly, and mathematics plays a crucial role in this process. Linear algebra provides tools for handling large datasets, while probability theory is essential for machine learning algorithms. Calculus helps optimize functions that artificial neural networks use to "learn".

At the same time, AI is now influencing mathematics itself. Computers with advanced AI are able to generate conjectures, test hypotheses, and even suggest possible proofs. This interaction between human creativity and computer precision is changing the way mathematics is practiced today.

Some experts believe that AI will never replace mathematicians, because intuition and creativity are uniquely human. Others, however, suggest that future generations of AI might surpass humans not only in speed, but also in the ability to find elegant solutions.

6. Which mathematical field is **most useful for machine learning**?
 - A. Geometry
 - B. Probability theory
 - C. Statistics
 - D. Number theory
7. According to the text, calculus helps AI by:
 - A. speeding up computers
 - B. teaching probability
 - C. optimizing functions
 - D. generating conjectures
8. How does AI contribute to mathematics today?
 - A. By replacing mathematicians
 - B. By creating textbooks
 - C. By testing and suggesting proofs
 - D. By teaching students directly
9. According to some experts, what cannot be replaced by AI?
 - A. Human speed
 - B. Human intuition and creativity
 - C. Human errors
 - D. Human precision
10. What prediction is made about future AI?
 - A. It may create elegant mathematical solutions
 - B. It will stop developing
 - C. It will make mathematics unnecessary
 - D. It will only be used in statistics

Текст 3. Тестове завдання на використання лексики (Use of English)

Заповніть пропуски (11–20) правильними варіантами (A, B, C або D).

Mathematics is often called the "language of science", (11) _____ it provides precise tools to describe the physical world. For example, Isaac Newton developed calculus to explain motion

and gravity. Later, Albert Einstein used advanced mathematics to (12) _____ his theory of relativity.

Today, mathematics is also vital in computer science. Algorithms are (13) _____ carefully designed instructions that computers follow. Without them, no modern software could (14) _____. Mathematics also (15) _____ a major role in cryptography, which protects our online communication.

Even in daily life, we (16) _____ mathematics when budgeting, cooking, or planning trips. Thus, mathematics is not only abstract but also highly (17) _____. Many students, however, (18) _____ difficulty learning it. Teachers therefore try to (19) _____ abstract ideas into practical tasks. The goal is to (20) _____ mathematics both useful and enjoyable.

- 11. A. because B. although C. unless D. so
 - 12. A. describe B. move C. refuse D. cancel
 - 13. A. nothing B. completely C. essentially D. eventually
 - 14. A. appear B. exist C. delete D. refuse
 - 15. A. makes B. plays C. forms D. creates
 - 16. A. look B. use C. go D. tell
 - 17. A. practical B. boring C. dangerous D. impossible
 - 18. A. do B. find C. make D. take
 - 19. A. translate B. copy C. send D. write
 - 20. A. keep B. let C. make D. show
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4. Граматичний блок

Для питань 21–40 виберіть одну правильну відповідь.

- 21. I'm really looking forward _____ you again next week.
A. to see B. seeing C. see D. to seeing
- 22. If he _____ harder, he would have passed the exam.
A. studies B. had studied C. studying D. study
- 23. Mathematics _____ considered difficult, but it is also fascinating.
A. is B. are C. has D. have
- 24. The problem was too complicated for the students _____ on their own.
A. solve B. solved C. solving D. to solve
- 25. By the time we arrived, the lecture _____.
A. had already started B. was already starting C. has already started D. is already starting
- 26. She asked me if I _____ finished my project.
A. had B. have C. will have D. has
- 27. The teacher suggested _____ the exercise together.
A. doing B. do C. did D. to do
- 28. While the students _____ the test, the teacher was preparing the next task.
A. wrote B. were writing C. write D. have written
- 29. A new library _____ in our university next year.
A. is built B. will build C. will be built D. is building
- 30. If I _____ more time, I would start another course in mathematics.
A. had B. have C. would have D. has

31. It was the first time he _____ such a difficult problem.
A. solves B. solved C. had solved D. has solved
32. The students were interested _____ the new teaching methods.
A. for B. with C. in D. by
33. He promised that he _____ help us with the presentation.
A. would B. will C. is going D. can
34. We usually have classes on Fridays, but today the lesson _____ cancelled.
A. was B. were C. has D. have
35. The more you practice, the _____ you become.
A. good B. better C. best D. well
36. She told me that she _____ already completed the task.
A. has B. had C. will have D. have
37. Our teacher insists that every student _____ the article before the seminar.
A. reads B. read C. reading D. to read
38. Neither the students nor the teacher _____ ready for the test.
A. was B. were C. be D. is
39. The exam results will be announced _____ the end of the week.
A. in B. on C. at D. for
40. If only I _____ more carefully, I would not have made that mistake.
A. think B. thought C. had thought D. have thought