

Introduction to English for Scientific Communication:

Opening Quiz Answers

Please answer the following questions.

Section 1: Please add 'the', 'a' or 'an' where necessary. There are some cases where no article is necessary, in this case please write 'none'.

1. We ignore the details of the frictional interaction.
2. This discussion provides us with an understanding of the more complicated case.
3. This procedure removes most of the ambiguities.
4. Thus, the above behaviour is described by the following equation: $A = B$.
5. Riehle et al. applied [none]/the/a unitary analysis to [none] data obtained in such experiments.
6. We consider the linear equation $P\psi = \mu\psi$, where [none] P belongs to the class σp .
7. We then transform into [none] spherical coordinates.
8. We now consider [none]/the right-handed neutrinos.
9. We carried out [none]/a detailed analysis in [none] Ref. [1].
10. [none] 20% of particles escape within the first T units of [none] time.

Section 2: Each of the sentences below has at least one incorrect use of a preposition. Please find this mistake (these mistakes) and correct them.

11. This effect results from the second term ~~in~~ on the right-hand side.
12. Here, a is equivalent ~~with~~ to a' .
13. This motion is always ~~toward~~ in the most unstable direction.
14. This operator is understood as acting ~~to~~ on even functions of x only.

15. The momentum dependence ~~is of~~ of this function cannot be ignored.

16. However, this function is finite ~~at~~ in the $x \rightarrow \infty$ limit.

Section 3: Fill the blanks with the correct word from the list. Note that each word should be used only once.

Maintained	Conserved	Preserved	Retained
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17. The question of why this asymmetry is preserved is not answered.

18. The delicate balance among the various influences is maintained by internal mechanisms.

19. Even after application of the conformal transform, the fundamental physics of the system is retained.

20. In their model, the total angular momentum is not conserved.

Section 4: The sentences below contain some common English mistakes made by Japanese scholars. These mistakes are highlighted. Please try to correct the sentences.

21. We now ~~make~~ construct a method to treat such anomalous cases.

22. We have ~~made~~ performed numerical simulations of this system.

23. This equation was derived ~~by~~ using the RG method.

24. This general solution ~~is able to be extended by~~ can be extended by an analytic continuation.

25. The distance between the plates is ~~decided by~~ determined by the size of the granular particles.

Section 4: Write a short passage explaining what you believe is the greatest scientific discovery. Please describe what that discovery is and why you believe it to be the greatest discovery.

Ideas: Penicillin, Relativity, Classic Mechanics, genes/DNA, Maxwell's laws

Title: The Discovery of Penicillin by Alexander Fleming

Paragraph ideas: 1) Antibiotics and the revolution of modern medicine, 2) The Lucky Discovery of Penicillin, 3) Historical significance of Penicillin, 4) Society without penicillin

“The Discovery of Penicillin by Alexander Fleming”

Potentially the greatest advance in modern medicine was the development of antibiotics for medical use. It was the introduction of antibiotics that allowed many previously incurable diseases, i.e. Syphilis, to be cured. From their first clinical trials about 80 years ago, antibiotics now form the basis of many medical treatments. The first antibiotic, the father of all antibiotics, was Penicillin. Therefore, I believe that the discovery of Penicillin is the greatest scientific discovery.

Even though Penicillin was a great discovery, it was discovered by accident. The Scottish biologist Sir Alexander Fleming was the discoverer of Penicillin, but the discovery came as a result of his lab being highly disorganised. Fleming had accidentally left a Staphylococcus plate culture open and observed that a blue-green mould had grown in this culture. Surrounding this blue-green mould there was a halo of inhibited bacterial growth. It was found that the mould was exuding a substance that was suppressing the growth of the bacteria in the culture. This substance, first called ‘mould juice’ by Fleming, was Penicillin.

Penicillin has maintained its position of historical significance because of the sudden advancement in treatment it provided. Penicillin has saved the lives of thousands, if not millions of people, because bacterial infections like Syphilis could not be treated before Penicillin was invented. Now, there are treatments available for a vast multitude of infections, and all these gains stem from the discovery of Penicillin.

It is hard to imagine what our society would be like if Penicillin had not been discovered. However, I think it is safe to say that it would be very different from the society we see today. Due to the sheer impact that the discovery has had on the life of almost every human being, I believe that the discovery of Penicillin is the greatest of all the scientific discoveries.