

Fundamentals of Scientific Research and Publication

Science · Answer Key · 20 Questions

1. What does the Latin word 'scientia', from which the term 'science' originates, mean?

- A) Discovery
- B) Knowledge**
- C) Experimentation
- D) Observation

2. What is the primary meaning of the word 'research'?

- A) To observe again
- B) To analyze again
- C) To search again**
- D) To conclude again

3. Which of the following is NOT listed as a quality of a researcher?

- A) Rigor with intellectual integrity
- B) Impatience**
- C) Curiosity
- D) Objectivity

4. According to the text, what is the primary goal of a doctorate?

- A) To know everything about a subject
- B) To ask the right question and build solid scientific reasoning**
- C) To summarize existing knowledge
- D) To become a manager in a research institution

5. What is the ultimate goal of a scientific article?

- A) To entertain the reader
- B) To transfer new knowledge**
- C) To criticize previous work
- D) To generate funding

6. In the IMRaD format for scientific articles, what does 'R' stand for?

- A) Review
- B) Results**
- C) References
- D) Reproduction

7. What is a key characteristic of a scientific article regarding its topic?

- A) It should cover multiple main ideas
- B) It must focus on one precise topic and one main idea**
- C) It can be written in a poetic style
- D) It should avoid repeating important terms

8. Why is English usually the language used in science?

- A) It is the most beautiful language
- B) It is the most widely understood international language for scientific communication**
- C) It is required by all universities
- D) It is the easiest language to learn

9. What is the main purpose of a 'Review Paper'?

- A) To present new, original results
- B) To summarize and synthesize the work of others**
- C) To describe a single case study in detail
- D) To announce a scientific event

10. What is a 'Short Article' or 'Brief Communication' primarily designed for?

- A) To present extensive research findings
- B) To address a very specific research question with limited length and rapid publication**
- C) To provide a comprehensive literature review
- D) To detail complex methodologies

11. Which chemical identifier is a text way to draw a molecule using letters and symbols and is practical for software?

- A) CAS Number
- B) PubChem CID
- C) InChIKey
- D) SMILES**

12. What is the 'InChIKey'?

- A) A detailed chemical structure representation
- B) A registry number issued by Chemical Abstracts
- C) A condensed version of InChI, always 27 characters, ideal for database searches**
- D) A visual representation of a molecule

13. When choosing a topic for academic writing, what is advised regarding its scope?

- A) It should be as broad as possible
- B) It should be precise, feasible, and current**
- C) It should be completely new with no prior references
- D) It should focus on a topic that is already extensively covered

14. What is the primary purpose of an abstract in a scientific article?

- A) To provide detailed methodology
- B) To offer a concise, complete, and impactful summary of the entire report**
- C) To list all references
- D) To critically evaluate the work

15. In academic writing, what is the role of the 'Introduction' section?

- A) To present the study's findings
- B) To describe the current state of the problem, state questions, and announce methods**
- C) To discuss limitations
- D) To provide a bibliography

16. What should the 'Results' section of a scientific article primarily contain?

- A) Interpretations and discussions of findings
- B) Raw statistical results, presented clearly with tests used, but no discussion or interpretation**
- C) Background information on the topic
- D) Suggestions for future research

17. In the 'Discussion' section of a scientific article, what is a key activity?

- A) Introducing new data
- B) Comparing the study's results with those in the literature and providing explanations**
- C) Summarizing the main findings
- D) Listing all cited sources

18. What is a crucial characteristic of a 'Conclusion' in a research paper?

- A) It should be long and detailed
- B) It should be short, precise, based on results, and highlight limitations**
- C) It can introduce new ideas unrelated to the topic
- D) It should use emotional language

19. What is the purpose of a bibliography?

- A) To list all figures and tables
- B) To allow readers to find and identify the sources used in the work**
- C) To provide author contact information
- D) To summarize the article's main points

20. When citing three or more authors in a text, what is the standard convention?

- A) List all author names
- B) List only the first author followed by 'et al.'**
- C) List the last author first
- D) Do not cite if there are more than two authors