

Chapter 1 Test About Science

True or False Questions

Circle the correct answer.

- T** **F** 1. In science, an educated guess about the answer to a scientific question is called a hypothesis.
- T** **F** 2. The synthesis of a large collection of information that encompasses well-tested and verified hypotheses about certain aspects of the natural world is known as a scientific theory.
- T** **F** 3. When scientific findings are expressed mathematically, they are easier to verify or disprove by experiment.
- T** **F** 4. A scientific fact is something that is absolute and unchanging.
- T** **F** 5. A hypothesis if scientific is there exists a test for proving it wrong.

Multiple Choice Questions

Choose the best answer to each question and write the appropriate letter in the space provided.

- _____ 6. Physics is the most basic science because
 - a. you can better understand science in general if you understand physics.
 - b. the ideas of physics extend into more complex sciences.
 - c. underneath biology is chemistry and underneath chemistry is physics.
 - d. all of the above
- _____ 7. Which one of the following steps is NOT part of a scientific method?
 - a. Make a guess about the answer and predict its consequences.
 - b. Perform experiments to test the predictions.
 - c. Repeat the experiments until the answers match the predictions.
 - d. Formulate a general rule based on the predictions and experimental outcome.
- _____ 8. A scientific fact is
 - a. an educated guess that has yet to be proven by experiment.
 - b. a synthesis of a collection of data that includes well-tested guesses.
 - c. close agreement by competent observers of observations of the same phenomena.
 - d. a guess that has been tested over and over again and always found to be true.
- _____ 9. A hypothesis is
 - a. an educated guess that has yet to be proven by experiment.
 - b. a synthesis of a large collection of information that includes guesses.
 - c. close agreement by competent observers of observations of the same phenomena.
 - d. a guess that has been tested over and over again and always found to be true.

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- _____ 10. A theory is
- an educated guess that has yet to be proven by experiment.
 - a synthesis of a large collection of information including well-tested guesses.
 - close agreement by competent observers of observations of the same phenomena.
 - a guess that has been tested over and over again and always found to be true.
- _____ 11. Which of these is a scientific hypothesis?
- Atoms are the smallest particles of matter that exist.
 - The universe is surrounded by a second universe, which cannot be seen.
 - Albert Einstein is the greatest physicist of the twentieth century.
- _____ 12. Which of the following statements is not true?
- Science is a method of answering theoretical questions.
 - Technology is a method of solving practical problems.
 - Science, not technology, excludes the human factor.
 - Both science and technology exclude the human factor.
- _____ 13. Which one of the following problems would NOT be a part of physics?
- Identifying all the forces acting on a person who is walking uphill
 - Calculating the instantaneous velocity of an accelerating car
 - Identifying all the bones in a human body
 - Calculating the average density of a person
- _____ 14. To test a scientific hypothesis you would
- set up one experiment and look at the results.
 - set up many experiments and look at the results.
 - use the results of only the experiments that confirm the hypothesis.
 - find the best result and report only that result.
- _____ 15. The difference between a hypothesis and a theory is that a hypothesis
- is testable, whereas a theory is not testable.
 - is not testable, whereas a theory is testable.
 - can be revised, whereas a theory cannot be revised.
 - is a guess that has not been well-tested, whereas a theory is a synthesis of well-tested and verified guesses.

Essay Question

On a separate sheet of paper, answer the following question.

16. Write a short paragraph on scientific methods.