1. Tamer understood that reproducibility is an important part of the scientific method. Therefore, he repeated his experiment on fur color in rabbits four separate times and obtained the same result each time. However, his teacher informed him that his results had not yet been proven valid and suggested that his experiment be conducted by another student at different school. Which of the following is the best reason for this recommendation?
   - A) The two schools often swapped science experiments.
   - B) If Tamer's results were replicated, they would be more valid.
   - C) The student at the other school was struggling.
   - D) The teacher knew that Tamer had errors in his experiment.

Correct answer(s): B

2. Tanya developed an experiment and then performed it multiple times. Ian also performed Tanya's experiment. Which of the following best describes Tanya and Ian's actions?
   - A) Tanya was repeating her experiment and Ian was replicating Tanya's experiment.
   - B) Tanya was looking for additional information and Ian was repeating Tanya's experiment.
   - C) Tanya was correcting flaws in her experiment and so was Ian.
   - D) Tanya was conducting a scientific investigation, but Ian was not.

Correct answer(s): A

3. Most hypotheses of experiments are not accepted until other scientists verify the results. Which process occurs when one scientist carries out the same procedures used by another in order to verify the results?
   - A) validation
   - B) repetition
   - C) a trial
   - D) replication

Correct answer(s): D

4. Tiffany repeated her experiment about light and color four times. Each time, she got different results and she became discouraged. However, her teacher informed her that she was working like an actual scientist. Which of the following is the **best** explanation for her teacher's statement?
   - A) The teacher did not know that Tiffany's results kept changing.
   - B) The teacher wanted to motivate Tiffany to keep working.
   - C) The teacher knew scientists always repeat experiments.
   - D) The teacher was always kind to students.

Correct answer(s): C

5. Dr. Yardley conducted the same experiment on plants six times before publishing her results. Dr Yourman repeated her experiment on earthworms only twice, then two independent laboratories replicated her experiment. Why are Dr. Yourman's results more widely accepted than Dr. Yardley's?
   - A) Dr. Yardley repeated her experiment too many times for it to be valid.
   - B) Dr. Yardley's results were considered significantly more important than Dr. Yourman's.
   - C) Experiments on earthworms are considered more important than experiments on plants.
   - D) Dr. Yourman's results were replicated, and Dr. Yardley's were not.

Correct answer(s): D

6. Results in science are not generally accepted as being accurate until they can be verified. Which of the following is an example of repetition in science?
   - A) A scientist analyzes the data included in the published work of another scientist and agrees with the

conclusions.

B) One scientist carries out the same experiment performed by another scientist to validate the results.

C) A student designs an experiment on plant growth that includes multiple trials.

D) A scientist poses a new question for investigation after reading the results of another scientist's work.

Correct answer(s): C

7. Dr. Taylor performed an experiment on the aggressiveness of two different species of bees. After he completed one trial of his experiment, he summarized the results and sent them to a scientific journal for publication. The journal rejected his article and would not publish it. Which of the following is the most likely reason for the journal's?

A) Scientists must do several repetitions of an experiment before its results are believable.

B) Dr. Taylor wrote up his results too quickly and it was of poor-quality.

C) Dr. Taylor had already published a number of articles in that publication and had reached his limit.

D) The journal only published articles concerning medical science.

Correct answer(s): A

8. Darren conducted an experiment on the effect of different types of drinks on athletic performance. He gave milk to one group of runners, water to another group of runners, and a low-carbohydrate sports drink to a third group of runners. He timed how long it took each group to run 100 meters and then averaged each group's times. He repeated the experiment three times and compiled his results in the table below.

BEVERAGES AND THEIR EFFECT ON RUNNING TIMES

BEVERAGE	TRIAL 1	TRIAL 2	TRIAL 3
milk	13 sec	12 sec	12.5 sec
water	12 sec	12.5 sec	12 sec
sports drink	11.5 sec	12 sec	12 sec

Which of the following reasons **best** explains why Darren repeated his experiment three times?

A) He repeated his experiment to make his results more reliable.

B) He was trying to obtain different experimental results.

C) He did not perform the experiment correctly the first two times.

D) He knew that all experiments should be repeated three times.

Correct answer(s): A

9. Scientists frequently repeat the experiments of others scientists. Why is this important in science?

A) Replication of experiments helps to confirm and verify results.

B) Scientists often ask each other for help in performing experiments.

C) Repeating experiments is an effective way to make sure a laboratory is in optimal condition.

D) Scientists frequently perform other scientists' experiments in order to practice their technique.

Correct answer(s): A

10. Cara read an article on why repetition and replication are so important, but she did not understand the difference between them. Which of the following **best** explains the two terms?

A) Repetition is when a scientist publishes in more than one scientific periodical; replication is when another scientist reproduces another scientist's results.

B) Repetition is when a scientist repeats an experiment; replication is when a scientist conducts an experiment on genetic material.

C) Repetition is when a scientist does the same experiment a number of times; replication is when other scientists reproduce a scientist's experiment.

D) Repetition is when a scientist commits an error in an experiment the first time and must repeat it; replication is when a scientist repeats an experiment to make sure it is valid.

Correct answer(s): C

Done Show/Hide Answers