Quiz: The Nature of Science – Independent & Dependent Variables

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Part A: Multiple Choice: Choose the best answer for each question.

1. What is an independent variable?
   a. The factor that is measured
   b. The factor that is changed or manipulated
   c. The result of an experiment
   d. The conclusion of an experiment

2. What is a dependent variable?
   a. The factor that is changed on purpose
   b. The factor that remains the same
   c. The factor that is measured or observed
   d. The hypothesis

3. A scientist changes the amount of water given to plants and measures their height. What is the independent variable?
   a. Plant height
   b. Type of plant
   c. Amount of water
   d. Soil type

4. In an experiment testing how sunlight affects plant growth, what is the dependent variable?
   a. Amount of sunlight
   b. Plant growth
   c. Type of plant
   d. Pot size

5. Which statement best describes the relationship between independent and dependent variables?
   a. The dependent variable is changed to affect the independent variable.
   b. The independent variable is measured.
   c. The independent variable affects the dependent variable.
   d. They are always the same.

6. A student changes the temperature of water and records how much sugar dissolves. What is the dependent variable?
   a. Water temperature
   b. Amount of sugar dissolved
   c. Type of sugar
   d. Container size

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Part B: True or False: Write T or F

7. _____ The independent variable is the factor that a scientist changes.

8. _____ The dependent variable is what is measured during an experiment.

9. _____ A good experiment can have no variables.

10. _____ The dependent variable depends on changes made to the independent variable.

11. _____ In an experiment, the independent variable is usually graphed on the x-axis.

12. _____ The dependent variable is usually graphed on the y-axis.

Part C: Fill in the Blank

Word Bank

independent	dependent	measured	changed	experiment	variable

13. A factor that can change in an _____ is called a variable.

14. The independent variable is the factor that is _____ by the scientist.

15. The dependent variable is the factor that is _____ or observed.

16. The results of an experiment are shown by the _____ variable.

17. The _____ variable affects the dependent variable.

18. Both independent and dependent variables are types of _____.

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