

Chemistry-Unit 1 Test

1. Number the steps of the scientific method in correct order:
 - a. _____ Construct hypothesis
 - b. _____ Ask a question
 - c. _____ Report results
 - d. _____ Do background research
 - e. _____ Test with experiment
2. Which type of data is described in terms of some quality or categorization that may be informal or may use ill-defined characteristics such as warmth and flavor?
 - a. Quantitative
 - b. Qualitative
3. Which type of data is described in terms of quantity and in which numerical values are used?
 - a. Qualitative
 - b. Quantitative
4. Which type of data is used here-a for qualitative or b for quantitative:
 - a. The book is 2 in thick. _____
 - b. The book has a cover. _____
 - c. The heater is warm. _____
 - d. The heater turns on due to electricity. _____
 - e. The heater is 80 degrees. _____
5. The scientific method uses observations and conclusions. Choose a for observation or b for conclusion:
 - a. Strawberry is sweet, therefore, all fruits must be sweet.
 - b. The wick caught fire when the flame was near.
 - c. Wood is a fuel since it produces a flame when lit.
 - d. The wick was 2 cm shorter.
6. Chemistry is the study of (choose the BEST answer):
 - a. Reactions
 - b. Solutions
 - c. Matter
 - d. Fire
7. An educated guess which explains observations is called:
 - a. Experiment
 - b. Conclusion
 - c. Variable
 - d. Hypothesis

8. The variable that is deliberately changed in an experiment is called?
- The controlled variable
 - The manipulated variable
 - The responding variable
9. When a hypothesis is tested and shown to be incorrect, the experiment is NOT considered a failure.

Why? _____

10. Label these as safe or unsafe laboratory practices:

- Using gloves
 - Wearing flip flops
 - Wearing a lab coat (or similar shirt)
 - Chewing gum
 - Hair in your eyes
 - Wearing goggles
 - Conducting experiment alone
11. What is the amount of space an object occupies?
- Temperature
 - Volume
 - Mass
 - Length
12. What is the amount of matter in an object?
- Temperature
 - Volume
 - Mass
 - Length
13. Match the unit of measure to the Metric equivalent
- | | |
|----------------|--------------|
| a. Length | _____gram |
| b. Mass | _____Celsius |
| c. Volume | _____liter |
| d. Temperature | _____meter |
14. A block has a length of 4.0cm, a width of 2.0cm, and height of 1.0cm. What is the volume? Check your units!
15. If this block dropped into 23.0mL of water, what will the new volume be?
16. A beaker has a mass of 52.0g. After water is added, the new mass is 76.0g. What is the mass of the water?

Write the following in either scientific notation or decimal notation, whichever is appropriate:

17. 1.6×10^5
18. 5,000
19. 0.0056
20. 9.7×10^{-2}

Calculate these metric conversions. **Provide answers in scientific notation.**

21. 33.5 cs = _____ s
22. 4.5×10^{-3} mL = _____ dL
23. 3500mm = _____ km
24. 6.7×10^5 ug = _____ g (ug is micrograms)

How many significant figures are in each of these numbers?

25. 457
26. 67,000
27. 0.00480
28. 20.05
29. 0.042
30. 0.0230