Name: _____ Class: _____ Date: _____ ID: A

Honors Chemistry: Practice Questions Unit 1 Intro. to Chem

Multiple Choice
Identify the choice that best completes the statement or answers the question.

____ 1. Which of the following is an example of a quantitative observation?
a. The piece of metal is longer than the piece of wood.
b. Solution 1 is much darker than solution 2.
c. The liquid in beaker A is blue.
d. The temperature of the liquid is 60°C.
e. At least two of the above (A-D) are quantitative observations.

____ 2. The statement "The total mass of materials is not affected by a chemical change in those materials" is called a(n)
a. observation
b. measurement
c. theory
d. natural law
e. experiment

____ 3. Which of the following metric relationships is incorrect?
a. 1 microliter = 10^{-6} liters
b. 1 gram = 10^{3} kilograms
c. 10^{3} milliliters = 1 liter
d. 1 gram = 10^{2} centigrams
e. 10 decimeters = 1 meter

____ 4. Order the four metric prefixes from smallest to largest.
a. nano- < milli- < centi- < kilo-
b. milli- < nano- < centi- < kilo-
c. kilo- < centi- < nano- < milli-
d. kilo- < centi- < milli- < nano-
e. centi- < nano- < kilo- < milli-

____ 5. Convert 0.3980 m to mm.
a. 398.0 mm
b. 3.980×10^{-3} mm
c. 3.980×10^{-4} mm
d. 0.03980 mm
e. none of these

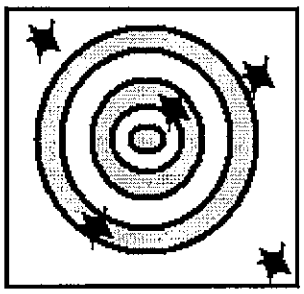
____ 6. The degree of agreement among several measurements of the same quantity is called _____. It reflects the reproducibility of a given type of measurement.
a. accuracy
b. error
c. precision
d. significance
e. certainty

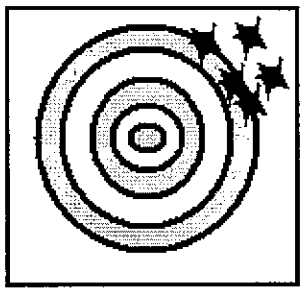
____ 7. As part of the calibration of a new laboratory balance, a 1.000-g mass is weighed with the following results:

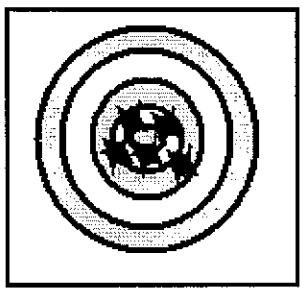
Trial	Mass
1	1.201 ± 0.001
2	1.202 ± 0.001
3	1.200 ± 0.001

The balance is:
a. Both accurate and precise.
b. Accurate but imprecise.
c. Precise but inaccurate.
d. Both inaccurate and imprecise.
e. Accuracy and precision are impossible to determine with the available information.

Consider the following three archery targets:

I. 

II. 

III. 

____ 8. Which of the following figure(s) represent a result having high precision?
a. Figure I only
b. Figure II only
c. Figure III only
d. Figure I and Figure II
e. Figure II and Figure III

____ 9. You measure water in two containers: a 10-mL graduated cylinder with marks at every mL, and a 1-mL pipet marked at every 0.1 mL. If you have some water in each of the containers and add them together, to what decimal place could you report the total volume of water?
a. 0.01 mL
b. 0.1 mL
c. 1 mL
d. 10 mL
e. none of these

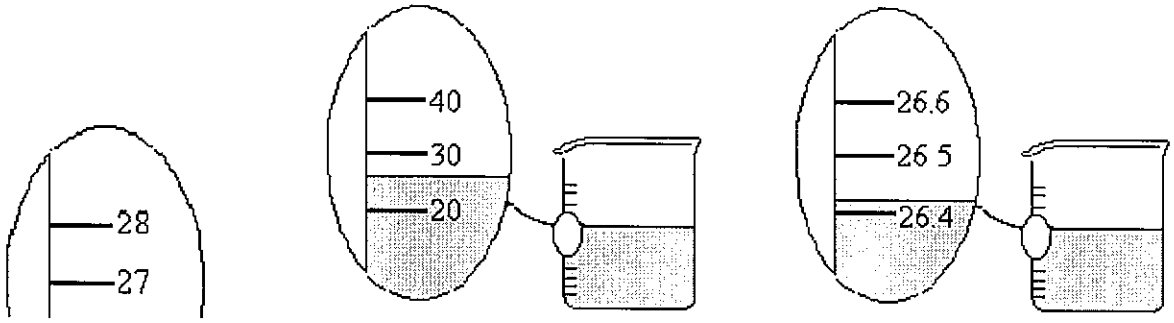
____ 10. A scientist obtains the number 0.045006700 on a calculator. If this number actually has four (4) significant figures, how should it be written?
a. 0.4567
b. 0.4501
c. 0.0450
d. 0.04500
e. 0.04501

____ 11. Express the number 0.000333 in scientific notation.
a. 333×10^{-6}
b. 3.33×10^{2}
c. 3.33×10^{4}
d. 3.33×10^{-4}
e. 0.333×10^{-3}

____ 12. Express 165,000 in exponential notation.
a. 1.65000×10^{5}
b. 1.65×10^{5}
c. 1.65000×10^{-5}
d. 1.65×10^{-5}
e. 165×10^{3}

____ 13. We generally report a measurement by recording all of the certain digits plus ____ uncertain digit(s).
a. no
b. one
c. two
d. three
e. four

____ 14. The beakers shown below have different precisions as shown.



Suppose you pour the water from these three beakers into one container. What would be the volume in the container reported to the correct number of significant figures?

a. 78.817 mL
b. 78.82 mL
c. 78.8 mL
d. 80 mL
e. 79 mL

____ 15. Consider the numbers 23.68 and 4.12. The sum of these numbers has ____ significant figures, and the product of these numbers has ____ significant figures.

a. 3, 3
b. 4, 4
c. 3, 4
d. 4, 3
e. none of these

____ 16. Using the rules of significant figures, calculate the following:

$$\frac{6.167 + 68}{5.10}$$

a. 14.5
b. 16
c. 15
d. 82
e. 14.54

____ 17. What is the best answer to report for $\frac{3.478\ \text{g} \times 1.164\ \text{g}}{2.00\ \text{mL}} - 0.169\ \text{g/mL}\ \text{g/mL}$?

a. 1.8510 g/mL
b. 1.851 g/mL
c. 1.85 g/mL
d. 1.9 g/mL
e. 2 g/mL

____ 18. What is the best answer to report for $(513 \times 0.0039) + 25.35$?
a. 27.351
b. 27.35
c. 27.3507
d. 27
e. 27.4

____ 19. Convert 44.7 m^3 to mm^3.
a. 4.47×10^7 mm^3
b. 4.47×10^{10} mm^3
c. 4.47×10^4 mm^3
d. 4.47×10^{-5} mm^3
e. 4.47×10^{-8} mm^3

____ 20. Convert 4338 mL to qt. (1 L = 1.06 qt)
a. 4598 qt
b. 4.092 qt
c. 4.092×10^{-3} qt
d. 4092 qt
e. 4.598 qt

____ 21. Convert 0.0494 ft^3 to L. (2.54 cm = 1 in., 1 L = 1 dm^3)
a. 1.40×10^1 L
b. 1.40 L
c. 1.51×10^{-3} L
d. 1.74×10^{-3} L
e. 1.62 L

____ 22. What is the density of an object having a mass of 8.0 g and a volume of 25 cm^3?
a. 0.32 g/cm^3
b. 2.0 g/cm^3
c. 3.1 g/cm^3
d. 200 g/cm^3

____ 23. In a laboratory exercise to determine the volume of a mole of a gas at STP, a student determines the volume to be 2.25 liters greater than the accepted value of 22.4 liters. The percent error in the student's value is
a. 2.25%
b. 10.0 %
c. 20.2%
d. 24.7%

Honors Chemistry: Practice Questions Unit 1 Intro. to Chem [Answer Strip] **ID: A**

D 1.

D 2.

B 3.

A 4.

A 5.

C 6.

C 7.

E 8.

B 9.

E 10.

D 11.

B 12.

B 13.

E 14.

D 15.

C 16.

C 17.

E 18.

B 19.

E 20.

B 21.

A 22.

B 23.