

CHEM 121a Quiz 1

Please print your name and the "Test Color" (above) on your Scantron sheet. Carefully mark the appropriate answer to each question on the Scantron sheet, and show any work in the space provided. Each question is worth 1 point (20 pts total). Please hand in both the Quiz and the Scantron sheet.

- Convert 0.092 ft^3 to L. ($2.54 \text{ cm} = 1 \text{ in.}$, $1 \text{ L} = 1 \text{ dm}^3$)
 - 0.40 L
 - 2.6 L
 - 1.8 L
 - 26 L
 - $3.2 \times 10^{-3} \text{ L}$
- In a recent accident some drums of uranium hexafluoride were lost in the English Channel. The melting point of uranium hexafluoride is 64.5°C . What is the melting point of uranium hexafluoride on the Fahrenheit scale?
 - 148°F
 - 82.3°F
 - 122°F
 - 1.35°F
 - 116°F
- The correct name for NaBr is
 - sodium bromide
 - monosodium monobromide
 - sodium(I) bromide
 - monosodium bromide
 - sodium monobromide
- A scientist obtains the number 1250.37986 on a calculator. If this number actually has four (4) significant figures, how should it be written?
 - 1.250×10^{-3}
 - 1250.3799
 - 1.250×10^3
 - 1251
 - 1250.4
- Which of the following metric relationships is incorrect?
 - 100 centimeters = 1 meter
 - 1 megagram = 10^6 grams
 - 1 kilogram = 10^3 grams
 - 1 microliter = 10^{-6} liters
 - 1 millimeter = 10^3 meters
- 100 seconds contain this many nanoseconds.
 - 1×10^{12}
 - 1×10^{11}
 - 1×10^{10}
 - 1×10^8
 - 1×10^7
- A metric unit for mass is
 - meter.
 - kilogram.
 - ounce.
 - pound.
 - ton.

8. The numbers of protons, neutrons, and electrons in $^{127}\text{I}^-$ are:

- a. 52 p, 128 n, 53 e
- b. 53 p, 74 n, 54 e
- c. 53 p, 127 n, 52 e
- d. 53 p, 74 n, 52 e
- e. 53 p, 127 n, 54 e

9. A titration was performed to find the concentration of hydrochloric acid with the following results:

Trial	1	2	3
Molarity	1.25 ± 0.01	1.24 ± 0.01	1.26 ± 0.01

The actual concentration of HCl was determined to be 1.000 M; the results of the titration are:

- 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.
10. The density of a liquid is determined by successively weighing 25, 50, 75, 100, and 125 mL of the liquid in a 250-mL beaker. If volume of liquid is plotted along the horizontal axis, and total mass of beaker plus liquid is plotted on the vertical axis:
- a. the x, or horizontal, intercept is the negative value of the weight of the beaker.
 - b. the y, or vertical, intercept is the weight of the empty beaker.
 - c. the slope of the line is 1.0.
 - d. the line will pass through the origin.
 - e. the slope of the line is independent of the identity of the liquid.

11. Which of the following pairs is incorrect?

- a. NH_4Br , ammonium bromide
- b. K_2CO_3 , potassium carbonate
- c. BaPO_4 , barium phosphate
- d. CuCl , copper(I) chloride
- e. MnO_2 , manganese (IV) oxide

12. Rutherford's experiment was important because it showed that:

- a. radioactive elements give off alpha particles.
- b. the mass of the atom is uniformly distributed throughout the atom.
- c. a zinc sulfide screen scintillates when struck by a charged particle.
- d. an atom is mostly empty space.
- e. gold foil can be made to be only a few atoms thick.

13. Which of the following are incorrectly paired?

- a. Na, alkali metal
- b. Ar, noble gas
- c. Br, halogen
- d. Sn, transition metal
- e. Mg, alkaline earth metal

14. Which of the following is incorrectly named?

- a. $\text{Pb}(\text{NO}_3)_2$, lead(II) nitrate
- b. NH_4ClO_4 , ammonium perchlorate
- c. PO_4^{3-} , phosphate ion
- d. $\text{Mg}(\text{OH})_2$, magnesium hydroxide
- e. NO^{3-} , nitrite ion

15. Which of the following statements from Dalton's atomic theory is no longer true, according to modern atomic theory?
- Elements are made up of tiny particles called atoms.
 - Atoms are not created or destroyed in chemical reactions.
 - All atoms of a given element are identical.
 - Atoms are indivisible in chemical reactions.
 - All of these statements are true according to modern atomic theory.
16. Using the rules of significant figures, calculate the following: $\frac{6.167 + 83}{5.10}$
- 17.48
 - 17.5
 - 18
 - 20
 - 17
17. Which of the following is(are) correct?
- sulfide, S^{2-}
 - ammonium chloride, NH_4Cl
 - acetic acid, $HC_2H_3O_2$
 - barium oxide, BaO
- 1, 3, 4
 - all
 - none
 - 3, 4
 - 1, 2
18. A set of tested hypotheses that gives an overall explanation of some natural phenomenon is called a(n)
- experiment.
 - observation.
 - measurement.
 - natural law.
 - theory.
19. The symbols of a number of elements can be combined to spell the name of the element with atomic number six. Write the names of the elements in the order the symbols appear in the name of element number six.
- carbon, argon, boron, oxygen, nitrogen
 - carbon, argon, radon, boron, oxygen, nitrogen
 - calcium, arsenic, boron, oxygen, nitrogen
 - calcium, arsenic, beryllium, oxygen, neodymium
 - calcium, argon, beryllium, oxygen, neodymium
20. Which of the following pairs is incorrect?
- arsenic, As
 - copper, Co
 - manganese, Mn
 - sodium, Na
 - iron, Fe

Class Survey

Please answer on the back of the Scantron sheet. These responses will not be “matched-up” with your name. I am only interested in the responses of the class as a whole.

- [illegible]

Yellow ANSWER KEY FOR QUIZ 1

1. b
2. a
3. a
4. c
5. e
6. b
7. b
8. b
9. c
10. b
11. c
12. d
13. d
14. e
15. c
16. e
17. b
18. e
19. a
20. b