

CHEMISTRY UNIT 1
PRACTICE EXAM

- Which of the following particles are found in the nucleus of an atom?
 - Neutron
 - Proton
 - Electron
 - All of the above
 - 'a' and 'b' only
- There are approximately 7,100,000,000 (over 7 billion) human beings on the planet currently. In scientific notation, that is how many people?
 - 710×10^7
 - $.71 \times 10^{10}$
 - 7.1×10^9
 - 71×10^9
 - 71×10^8
- An element has 12 protons, 11 neutrons and 12 electrons. The atomic mass (in AMU) of that element is:
 - 35
 - 24
 - 23
 - 1
 - None of the above
- Indicators of a chemical reaction include all of the below **except**:
 - Change of phase (solid, liquid, gas)
 - Change in temperature
 - Change of color
 - Production of gas
 - Production of a solid
- In a chemical reaction, matter is not created nor destroyed. This statement is consistent with:
 - The ideas of Democritus
 - The law of conservation of matter
 - The law of constant composition
 - The findings of Bohr
 - None of the above
- Two atoms with the same number of protons but different numbers of neutrons are:
 - Ions
 - Orbitals
 - Precipitates
 - Isotopes
 - Isomers
- The number 0.0004907 has how many significant figures?
 - 3
 - 5
 - 7
 - 9
 - None of the above

8. A submarine sandwich measured 14.0 inches in length. How many centimeters is this?
- 5.6
 - 21
 - 28
 - 36**
 - None of the above
9. A sample of liquid has a volume of 43 ml and a mass of 30.53 g. What is the density of the liquid?
- .71 g/ml**
 - 1.41 g/ml
 - 1312.79 g/ml
 - 12.47 g/ml
 - None of the above
10. Liquid water freezes at 0 °C at sea level. The change from liquid to solid is a _____ change.
- Chemical
 - Physical**
 - All of the above
 - 'a' and 'b' only
 - Uuhhh, what was the question?
11. In the chemical change lab, the reddish solid that accumulated on the aluminum wire was:
- Na
 - NO₃
 - Al
 - Cu**
 - HCl
12. Bohr showed that electrons occupied certain _____, and each _____ has a different specific amount of energy and a different distance from the nucleus.
- Nuclei / nucleus
 - Protons / proton
 - Orbitals / orbital**
 - Neutrons / neutron
 - Gold foils / gold foil
13. Qualitative measurements are always measurements of amount of something, (i.e. they have numeric values) while quantitative measurements are statements about the presence or absence of something.
- True
 - False**
14. The element zuccinium has 75.53% of its atoms with an atomic mass of 34.9689 amu and 24.47% of its atoms have an atomic mass of 36.9659 amu. What is the average atomic mass of zuccinium? Show your work.
- $$(.7553)(34.9689 \text{ AMU}) + (.2447)(36.9659 \text{ AMU}) = 35.4575 \text{ AMU}$$
15. The density of lead is 11.34 g/cm³. The density of gold is 19.29 g/cm³. How much smaller would a 25 lb anchor be if it were gold compared to a 25 lb lead anchor?

$$(25 \text{ LBS}) \times (453.6 \text{ g}) = 11340 \text{ g}$$

$$V_L = \frac{M}{D} = \frac{11340 \text{ g}}{19.29 \text{ g/cm}^3} = 587.8623 \text{ cm}^3 \quad V_L = \frac{M}{D} = \frac{11340 \text{ g}}{11.34 \text{ g/cm}^3} = 1000 \text{ cm}^3$$

$$1000 \text{ cm}^3 - 587.8623 \text{ cm}^3 = 412.1377 \text{ cm}^3 \text{ SMALLER}$$