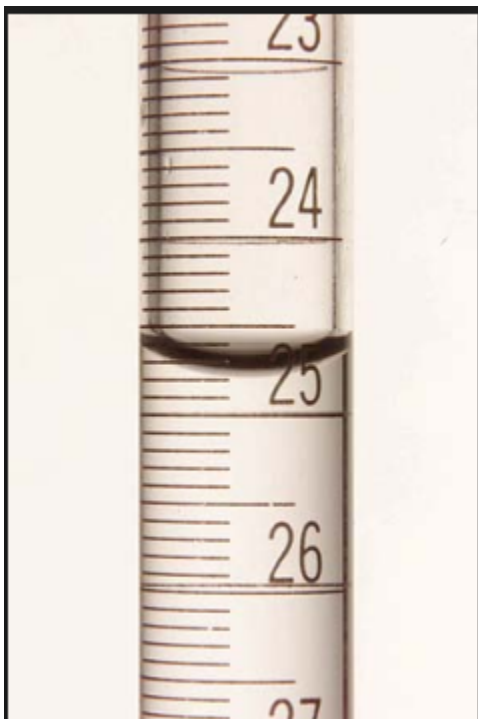


AP Chemistry

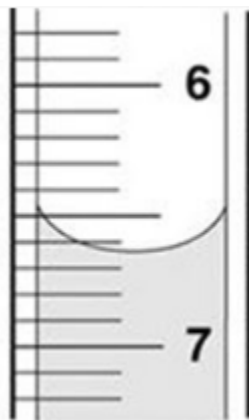
Thou Shalt Not Forget Questions

Unit 1

- What type of change separates a compound into elements?
 - What type of change separates a mixture into its components?
- Filtering separates mixtures based on differences in what property?
- Distillation separates mixtures based on differences in what property?
- Chromatography separates mixtures based on differences what property?
- In paper chromatography, if water is used as the “mobile phase”, what kind of substance will move moves up the farthest: something polar or something nonpolar?
 - In paper chromatography, if a nonpolar substance is used as the “mobile phase”, which component of a mixture will move moves up the farthest: something polar or something nonpolar?
- What type of change conserves mass: chemical, physical, both or neither?
- What is the volume of liquid in the buret?



- What is the volume of liquid in the buret?



8. a) Which piece of glassware is the most precise: beaker, burette, or graduated cylinder?
b) Which piece of glassware is the least precise: graduated cylinder, beaker, or burette?
c) List these pieces of glassware from most precise to least precise: burette, beaker, graduated cylinder
d) Which piece of glassware only has one line on it to so it can only be used to measure one specific volume?
 9. What is the equation for calculating the density of a substance?
 10. The % composition by mass of which substance does not change: het. mixture, ho. mixture or compound?
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Unit 2

1. a) When an electron is in a higher/lower energy level, is it closer or farther away from the nucleus?
b) When an electron is in a higher/lower energy level does it have more or less Coulombic attraction to the nucleus?
c) When an electron is in a higher/lower energy level, is it easier to remove or harder to remove?
d) When an electron is in a higher/lower energy level, does it have a higher or lower 1st ionization energy?
e) Why is a calcium atom larger than a magnesium atom?
2. a) Moving across a row (L to R) on the periodic table, does Z_{eff} increase, decrease, or stay the same?
b) Moving across a row (L to R) on the periodic table, are the valence electrons more or less attracted to the nucleus?
c) Moving across a row (L to R) on the periodic table, does the atomic radius increase or decrease?
d) Moving across a row (L to R) on the periodic table, does the ionization energy increases or decrease?
e) Why do atoms get smaller moving across a row (L to R) on the periodic table?
3. a) When reading a PES graph, what does the height of a peak represent?
b) When reading a PES graph, a larger binding energy means that the electrons are closer or farther from the nucleus?
4. Which orbital comes after 4s? 3d? 4p? 5s?
5. a) Which electrons are removed first when making a cation? s, p, d, or f?
b) Arrange these electrons in the order in which they are removed when forming a cation: s, p, d, f.
6. a) Isotopes of an element have the same number of _____, but different number of _____.
b) What makes an isotope of an element different from one another?
7. a) What do mass spectroscopy graphs measure?
b) What instrument measures the atomic masses of the isotopes of an element?

8. a) Elements in the same group (vertical columns) have similar _____.
 - b) Elements in the same _____ have similar chemical and physical properties.
 9. Is a gallium/hydrogen/uranium a metal, nonmetal or metalloid?
 10. a) Are cations/anions larger or smaller than their atoms?
 - b) Why are anions larger than their atoms?
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Unit 3

1. What type of bond forms between hydrogen and chlorine: polar covalent, nonpolar covalent., ionic, metallic or h-bond?
 2. a) Ionic bonds are formed between what types of elements?
 - b) When forming an ionic bond, which element gains/loses electrons?
 3. As the electronegativity difference between 2 atoms increases, what happens to the polarity of the bond?
 4. Combustion reactions produce what two substances?
 5. Name the 7 diatomic elements.
 6. a) The simplest whole # ratio of the atoms in a compound is called the _____ formula.
 - b) Complete the rhyme for calculating the empirical formula for a compound: “% to mass, mass to mole, _____, times ‘til whole.”
 7. Give a possible molecular formula for the following compound: AB₃ / A₂B
 8. What is the formula for calculating % yield?
 9. What is the formula for calculating % error?
 10. What is a limiting reactant?
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