

## Chemistry Final Exam Review I

### Chapter 1 and 2

1. Define

theory- **A unifying principle that explains a body of facts and/or those laws that are based on them.**

Law- **A concise verbal or mathematical statement of a relationship between phenomena that is always the same under the same conditions.**

Matter- **Anything that occupies space and has mass.**

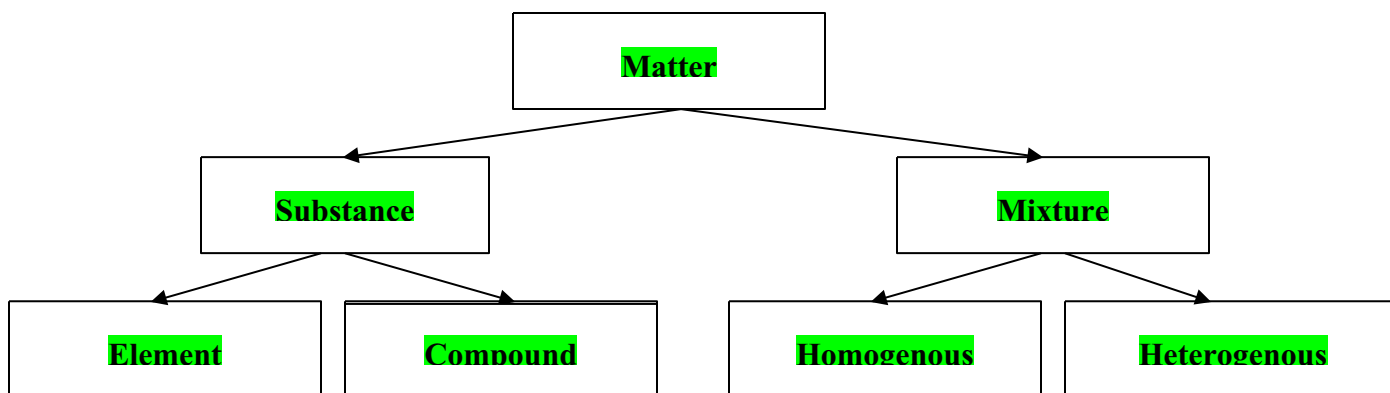
Element- **A substance that cannot be separated into simpler substances by chemical means.**

Substance- **A form of matter that has a definite (constant) composition and distinct properties.**

homogeneous mixture- **The composition of the mixture is the same throughout.**

heterogeneous mixture- **The composition of the mixture is not uniform throughout.**

2. fill in the flow chart showing the relationship between matter, substance, mixture, homogeneous mixture, heterogeneous mixture, element, and compound.



3. Check off the correct catagories

	Matter	Mixture	Substance	Homogeneous	Heterogeneous	Element	Compound
Iron	X		X				X
3% Hydrogen Peroxide Solution	X		X				X
Water	X		X				X
Muddy Water	X	X			X		
Sweet Tea	X	X		X			
Silver Nitrate Solution	X		X				X
Chunky Potato Soup	X	X			X		
Tin	X		X			X	
Table Salt	X		X				X

4. List three examples (not used above) of (Answers May Vary)

element	<b>Helium</b>	<b>Nitrogen</b>	<b>Chromium</b>
substance	<b>Diamond</b>		
compound	<b>Sugar(sucrose)</b>	<b>Baking Soda(sodium bicarbonate)</b>	<b>Air</b>
matter	<b>Apple</b>	<b>Paper</b>	<b>Sand</b>
mixture	<b>Soft Drinks</b>	<b>Milk</b>	<b>Cement</b>
homogeneous mixture	<b>Water</b>	<b>Mouthwash</b>	<b>Vinegar</b>
heterogeneous mixture	<b>Trail Mix</b>	<b>Sand</b>	<b>Muddy Water</b>

5. List three examples of each of the following

physical property	<b>Melting Point</b>	<b>Volume</b>	<b>Color</b>
chemical property	<b>Toxicity</b>	<b>Flammability</b>	<b>Electronegativity</b>
physical change	<b>Ice Melting</b>	<b>Boiling water</b>	<b>Evaporating alcohol</b>
chemical change	<b>Burning wood</b>	<b>Rusting iron</b>	<b>Baking a cake</b>

6. Name 3 chemical or physical properties to distinguish between a wall block, and a ceiling tile.

<b>Color</b>
<b>Volume</b>
<b>Length</b>

7. Describe two methods for separating mixture. (Answers may vary)

<b>Filtration- When a mixture contains a liquid and a solid component, then the liquid component is filtered out.</b>
<b>Crystallization- Separation by solubility.</b>

### Chapter 3

1. Define

Accuracy- **How close a measurement is to the true value of the quantity that was measured.**

Precision- **How closely two or more measurements of the same quantity agree with one another.**

Conversion Factor- **A numerical ratio to express a measurement from one unit to another.**

## Equality

### 2. Add using significant figures

A	$950.0 + 32$	<b>982.0</b>
B	$.0320 + .0055$	<b>0.375</b>

### 3. Subtract the following number using significant figures

A	$800 - 50.01$	<b>749.9</b>
B	$1.251 - .00655$	<b>1.244</b>

### 4. Multiply the following numbers using significant figures.

A	$11 \times 3.75$	<b>41.25</b>
B	$558 \times .0012$	<b>0.670</b>

### 5. Calculate the following division problem using significant figures.

A	$92.68 \div 5$	<b>18.54</b>
B	$.056 \div 0.008$	<b>7.0</b>

### 6. Convert the following. Write the conversion factor in the first box, the answer in the second box, and the answer using significant figures in the third box.

A	9.10 m to cm	<b>1 m=100 cm</b>	<b>910 cm</b>	<b><math>9.10 \times 10^2</math> cm</b>
B	18.5 L to kL	<b>1 L= 1000 kL</b>	<b>0.0185 kL</b>	<b><math>1.85 \times 10^{-2}</math> kL</b>

### 7. Convert the following. Write the conversion factor in the first box, the answer in the second box, and the answer using significant figures in the third box. Equalities are given for unknown quantities.

A	21.7 hr to d	<b>24 hr= 1 day</b>	<b>0.904 day</b>	<b><math>9.04 \times 10^{-1}</math> day</b>
B	1.44 d to weeks	<b>1 day = 1 week</b>	<b>0.205 week</b>	<b><math>2.06 \times 10^{-1}</math> week</b>

### 8. Convert the following temperatures to Celsius. Calculated answer in the first box, answer using significant figures in the second box.

A	18.5 K	<b>0 Celsius= -273 K</b>	<b>-245 Celsius</b>
B	200 K	<b>0 Celsius= -273 K</b>	<b>-73 Celsius</b>

### 9. Convert the following temperatures to Kelvin. Calculated answer in the first box, answer using significant figures in the second box.

A	250 °C	<b>0 Kelvin= +273 Celsius</b>	<b>523 K</b>
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B	14.2 °C	<b>0 Kelvin= +273 Celsius</b>	<b>287 K</b>
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10. Calculate the unknown quantity using the information given. Place the answer in the box provided, then write the answer using significant figures in the last box.

	Mass	Volume	Density	
A	92 g	10 mL	<b>9.2 g/mL</b>	
B	20.44 g	<b>2.27 cm<sup>3</sup></b>	9 g/cm <sup>3</sup>	
C	<b>8.624 g</b>	7cm x 11cm x .01cm	11.2 g/mL	

11. What is the equality between

A. kilometer and meter- **1 km= 1000 m**

B. centisecond and second- **1 cs= 100 s**

C. milligram and gram- **1000 mg= 1 g**

D. second and minute- **60 s = 1 min**

12. What is the metric unit for

Length	<b>Meter</b>
Mass	<b>Gram</b>
Volume	<b>Liter</b>
Density	<b>Gram/Cubic Centimeter or Gram/Milliliter</b>
Time	<b>Second</b>