

Spring 2026

CHM 111 – Quiz 1

Name: _____

1. Define matter

2. What are the two properties (factors) used to determine the physical state (e.g. solid, etc.) of a material?

3. Which of the following answer(s) best describes a solid? Select all correct answers.
A) indefinite shape C) high compressibility E) particles fixed in position
B) definite volume D) large distances between particles

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CHM 111 – Quiz 1

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A) indefinite shape C) high compressibility E) particles fixed in position
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CHM 111 – Quiz 2

Name: _____

1. Define matter.
2. How many significant digits are there in 1020?
3. A ream of paper contains five hundred sheets. Write the value of a ream in scientific notation.
4. Iron is a
 - A) compound
 - B) heterogeneous mixture
 - C) homogeneous mixture
 - D) pure substance
 - E) gas

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CHM 111 – Quiz 2

Name: _____

1. Define matter.
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 - A) compound
 - B) heterogeneous mixture
 - C) homogeneous mixture
 - D) pure substance
 - E) gas

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CHM 111 – Quiz 3

1. Provide an English/metric conversion factor for length, mass, **or** volume. _____
2. _____ is the base unit for mass in the metric system.
3. Convert 4.11 L to the equivalent quantity in microliters. (Show your work)

Name: _____

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CHM 111 – Quiz 3

1. Provide an English/metric conversion factor for length, mass, **or** volume. _____
2. _____ is the base unit for mass in the metric system.
3. Convert 4.11 L to the equivalent quantity in microliters. (Show your work)

Name: _____

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CHM 111 – Quiz 15

Show your work where applicable.

1. What is the mass percent of sodium in sodium chloride, NaCl? Na = 22.98 g/mol, Cl = 35.45 g/mol

2. Convert 258.4 °C to K. (Show your work)

3/4. Provide atomic symbol/name: _____ calcium _____ Ne

Name: _____

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CHM 111 – Quiz 15

Show your work where applicable.

1. What is the mass percent of sodium in sodium chloride, NaCl? Na = 22.98 g/mol, Cl = 35.45 g/mol

2. Convert 258.4 °C to K. (Show your work)

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Name: _____

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CHM 111 – Quiz 5

Name: _____

1. Define energy
2. Provide an English/metric conversion factor for **mass**: _____
3. Passing an electrical discharge through neon to make it glow represents a chemical/physical change. (circle answer)
4. An object dropping to the ground represents a kind of _____ energy.

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CHM 111 – Quiz 5

Name: _____

1. Define energy
2. Provide an English/metric conversion factor for **mass**: _____
3. Passing an electrical discharge through neon to make it glow represents a chemical/physical change. (circle answer)
4. An object dropping to the ground represents a kind of _____ energy.

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CHM 111 – Quiz 6

Name: _____

1. What are the units that make up a Joule? _____
2. A typical chemical equation provides the reader with 3 pieces of information. Provide 2.
3. Calculate the specific heat of a solid in $\text{J/g}\cdot^{\circ}\text{C}$ if 1638 J raises the temperature of 125 g of it from 25.0°C to 52.6°C .

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CHM 111 – Quiz 6

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3. Calculate the specific heat of a solid in $\text{J/g}\cdot^{\circ}\text{C}$ if 1638 J raises the temperature of 125 g of it from 25.0°C to 52.6°C .

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CHM 111 – Quiz 7

Name: _____

1. What is the formula for the force of attraction between two ions of opposite charge?
2. Define anion.
3. Complete the sentence (from the notes):
Ions always result from
4. What is the atomic number of carbon?

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CHM 111 – Quiz 7

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1. What is the formula for the force of attraction between two ions of opposite charge?
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3. Complete the sentence (from the notes):
Ions always result from
4. What is the atomic number of carbon?

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CHM 111 – Quiz 8

Name: _____

1. Provide the name and formula of a complex cation.
2. Name CoCl_2 .
3. There are two naturally occurring isotopes of chlorine. ^{35}Cl has a mass of 34.9689 amu and ^{37}Cl has a mass of 36.9659 amu. Determine the abundance of each isotope.

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CHM 111 – Quiz 8

Name: _____

1. Provide the name and formula of a complex cation.
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CHM 111 – Quiz 9

Name: _____

Atomic mass of Silicon is 28.0855 amu; atomic mass of fluorine is 18.9984 amu

1. What is Avogadro's number? _____
2. What is the molar mass (molecular weight) of SiF_4 ?
3. How many molecules of SiF_4 are in 17.4 g?
4. How many moles of SiF_4 are in 17.4 g?

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CHM 111 – Quiz 9

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CHM 111 – Quiz 10

Name: _____

Atomic mass of silicon is 28.0855 amu; atomic mass of fluorine is 18.9984 amu.

Atomic mass of chromium is 51.9961 amu; atomic mass of oxygen is 15.9994 amu, sodium is 22.9897 amu.

1. What is the percent mass of each element in silicon tetrafluoride?
2. A compound is 16.54% sodium, 37.41% chromium; and 46.05 % oxygen. What is its molecular formula?

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CHM 111 – Quiz 10

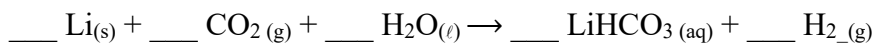
Name: _____

Atomic mass of silicon is 28.0855 amu; atomic mass of fluorine is 18.9984 amu.

Atomic mass of chromium is 51.9961 amu; atomic mass of oxygen is 15.9994 amu, sodium is 22.9897 amu.

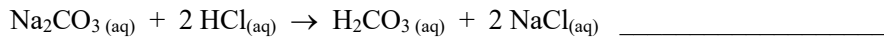
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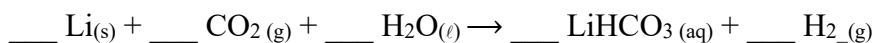


Gaseous chlorine dioxide reacts with ozone to yield gaseous dichlorine hexoxide and oxygen gas.

2. What kinds of reactions are the following:

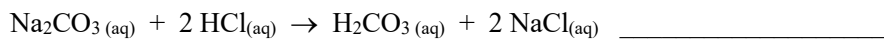


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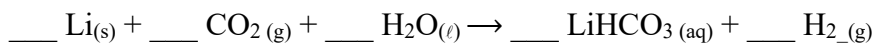


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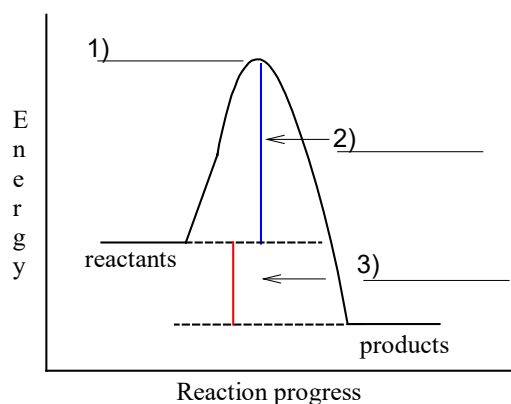
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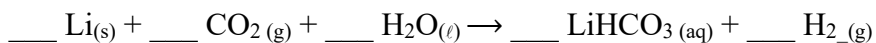
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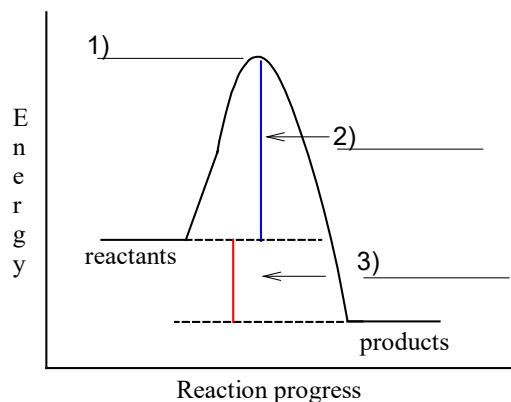
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1. Balance the following two equations:



Gaseous chlorine dioxide reacts with ozone to yield gaseous dichlorine hexoxide and oxygen gas.



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CHM 111 – Quiz 13

Name: _____

1. $\text{Na}_{(s)} + 2 \text{H}_2\text{O}_{(\ell)} \rightarrow \text{H}_{2(g)} + 2 \text{NaOH}_{(\text{aq})}$ is a _____ reaction.
2. Define molecular formula.
3. For the reaction in question 1, if 2.00 g of sodium react with 5.00 g of water, what is the theoretical yield of sodium hydroxide?

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CHM 111 – Quiz 13

Name: _____

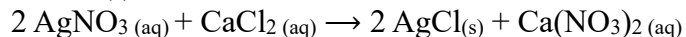
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CHM 111 – Quiz 13

Name: _____

1. When silver(I) nitrate is mixed with calcium chloride according to the reaction:



silver(I) chloride forms. What is the maximum mass of silver(I) chloride that can be produced by combining 3.00 g of each reactant? What is the percent yield if 1.50 g AgCl is produced?

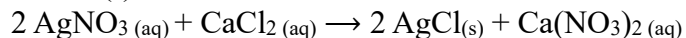
At. Wt. (g/mol): Ag = 107.87, N = 14.0067, O = 15.9994, Ca = 40.078, Cl = 34.453

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At. Wt. (g/mol): Ag = 107.87, N = 14.0067, O = 15.9994, Ca = 40.078, Cl = 34.453

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CHM 111 – Quiz 16

Name: _____

1. The correct number of protons, neutrons, and electrons in P^- (P-31) is: ____, ____, ____
2. What is the charge on sulfur in $FeSO_4$? _____
3. What is the formula for calcium perchlorate? _____
4. A standard dinnerplate is about 10.5 inches in diameter. What is its area in cm^2 ?
Show your work.

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CHM 111 – Quiz 16

Name: _____

1. The correct number of protons, neutrons, and electrons in P^- (P-31) is: ____, ____, ____
2. What is the charge on phosphorus in $FeSO_4$? _____
3. What is the formula for calcium perchlorate? _____
4. A standard dinnerplate is about 10.5 inches in diameter. What is its area in cm^2 ?
Show your work.