

Chemistry Review Test #I (2017)

Name _____ Hour _____

Use your notes and other resources to help answer the questions as needed.

1. Which of the following symbols is correctly written? **LI li Li II**
(circle one)

2. Give the symbol, name of each element, and the number of atoms in the molecule for **FeO₄S**

_____ = _____
_____ = _____
_____ = _____

3. Circle all that apply to this substance **NaCl**

element symbol formula molecule

4. Circle all that apply to this substance **Li**

element symbol formula molecule

5. Circle all that apply to this substance **Cl₂**

element symbol formula molecule

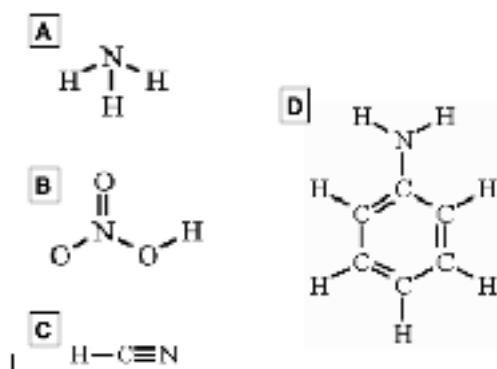
Matching

- | | |
|----------------------|----------------------|
| a. bond | f. mixture |
| b. chemical formula | g. molecule |
| c. chemical symbol | h. physical property |
| d. element | i. pure substance |
| e. chemical property | |

- _____ 6. C₆H₁₂O₆ is a shorthand way to represent molecules called a
_____ 7. substances made of only one type of element or molecule
_____ 8. type of property observed by the senses that does not change the substance.
_____ 9. force that holds atoms together in a molecule
_____ 10. substance made of one type of atom
_____ 11. type of property that shows the potential for change
_____ 12. two or more atoms joined together
_____ 13. C, O, and Na are all examples of
_____ 14. two or more substances that are mixed but not chemically combined

Look at the periodic table to help you with the following questions.

- _____ 15. The elements Tungsten (W), Iridium (Ir), and Lead (Pb) all belong to the same...
- a. family
 - b. period
 - c. atomic group
 - d. metalloid group
- _____ 16. The elements Tungsten (W) and Chromium (Cr) belong to the same...
- a. family
 - b. period
 - c. atomic group
 - d. metalloid group
- _____ 17. Nobel gasses are a group of nonreactive, nonmetallic gasses. Halogens are a highly reactive nonmetallic family that can be solids, liquids, or gasses. You are in the lab testing a nonmetallic gas that reacts very violently. To which family does this unknown element belong?
- a. Alkali metals
 - b. Halogens
 - c. Noble gasses
 - d. cannot tell with this information
- _____ 18. Radium is a silvery white metal that is solid at room temperature and very reactive. The properties of Strontium would be
- a. very different than radium
 - b. cannot tell with this information
 - c. very similar to radium
 - d. exactly the same as Radium
- _____ 19. NaHCO_3 is an example of a...
- a. symbol
 - b. formula
 - c. element
 - d. atom
- _____ 20. Which is not a molecule
- a. N_2
 - b. Ag
 - c. CO
 - d. PbSO_4
- _____ 21. Sodium and Magnesium are examples of...
- a. elements
 - b. families
 - c. molecules
 - d. formulas



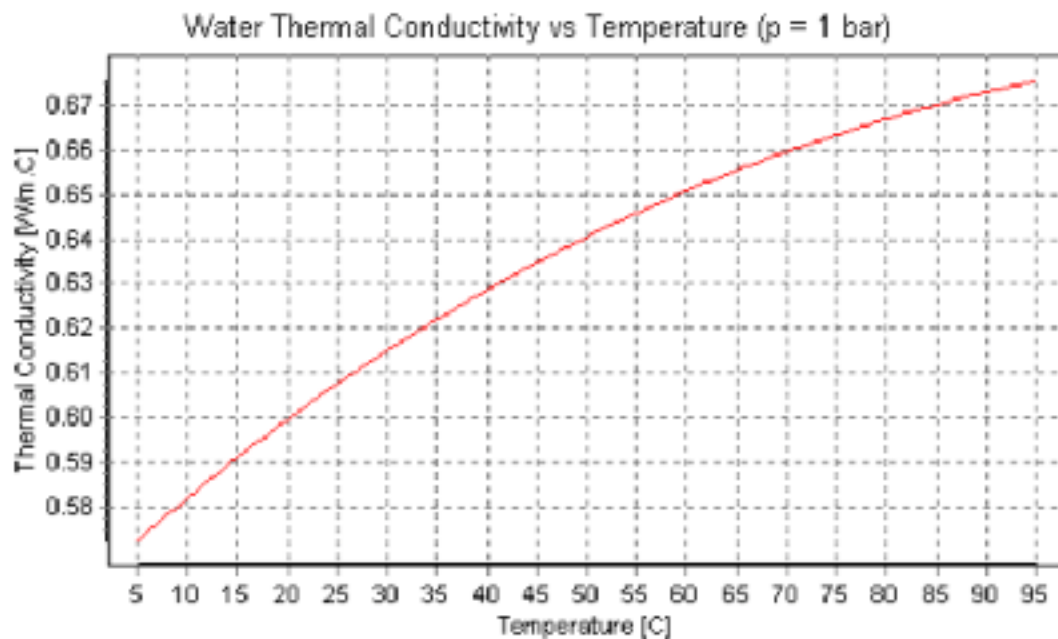
- _____ 22. Which of the molecules above shows the substance NH_3 (ammonia)?
- a. Molecule A
 - b. Molecule B
 - c. Molecule C
 - d. Molecule D
- _____ 23. Which molecule shows Nitric Acid (HNO_3)?
- a. Molecule A
 - b. Molecule B
 - c. Molecule C
 - d. Molecule D

24. 26. Place a check in the boxes that describe the substance below.

Substance	Molecule	Element	Formula	Symbol
CrNO ₃				
Fe				
Mg ₂				

27. Follow the example given below to fill in the chart.

Name	Formula	Atoms in a Formula
Calcium Carbonate	CaCO ₃	Ca = calcium 1 C = carbon 1 O = oxygen 3
Lithium Oxide	LiO ₂	



- _____ 28. Using the graph above, at what temperature is the thermal conductivity of water .66 W/m?
- a. 65°C c. 75°C
b. 70°C d. 80°C
- _____ 29. Which claim would be correct for the data shown in the graph?
- a. Thermal conductivity is not related to temperature.
b. Thermal conductivity increases as temperature decreases.
c. Thermal conductivity increases as temperature increases.
d. Thermal conductivity decreases as temperature increases.

Examine the properties of each family in the table below, then sort each element into its group. Place the symbol for each element in the table with its family.

Family A	Family B
<p><i>Characteristics</i></p> <ul style="list-style-type: none"> • Flammable • Dark colored • Dissolves in water • Solids 	<p><i>Characteristics</i></p> <ul style="list-style-type: none"> • Not Flammable • Color varies • Do not mix with water • Liquids
30. <i>Element Symbols</i>	31. <i>Element Symbols</i>

Atomic #
Symbol
Name

97 Mc Michiganium

? Bw Baldwinium

98 S Spiritum

107 EI Eatlunchium

- Michiganium is a dark green element that dissolves in water. When placed in a campfire it turns the flames blue and gold.
- Baldwinium is a pale blue liquid that floats on top of water. A common use of this element is in fire extinguishers.
- Spiritum is a bright yellow liquid that does not mix with water.
- Eatlunchium is a powder that can be mixed with water to make a drink at lunch time.

32. What does the atomic number 97 tell you about Michiganium? _____

33. What is the atomic number of Baldwinium? _____

34. How could these elements be placed into the periodic table? Put the number and symbol of each element in the box, you don't have to write the names.

Linda Ponce is a famous baker who is known for creating extraordinary wedding cakes. Janice Patel recently hired Mrs. Ponce to make a \$2000 cake for her wedding. According to Mrs. Ponce, once she finished baking the cake, she suddenly had to leave. She told police investigators that she received a phone call asking that she pick up her sick son from school. In a rush, and unable to clean up quickly, she left the cake unwrapped and in kitchen in disarray.

When Mrs. Ponce returned to her shop about twenty minutes later, the cake was gone. Since Mrs. Ponce left the kitchen so quickly, she left all the bowls, icing, cooking powders, and other materials spread all over the counters. It was such a mess that the investigators believed that whoever took the cake must have pieces of the powder in their shoes. Mrs. Ponce indicated that the white powders were most likely baking soda and flour.

When asked if she knew anyone who would want to destroy her reputation, Mrs. Ponce gave the investigators four names. She listed four individuals that are also in the baking industry and are her biggest rivals, Esteban Younce, Tim Young, Lisa Deering, and Tammy Goos,. The last suspect is her neighbor, Sally Cora who has been jealous of her for many years.

All of the suspects were contacted and samples of powders were taken from their shoes.

The table below contains information about various powders

Substance	Appearance (coarse or fine?)	Litmus (acid or base?)	Vinegar (bubbles?)	Biuret (protein?)	Iodine (starch?)
Baking powder	Fine	Neutral (<i>also bubbles</i>)	Yes	No	Yes (<i>bubbles</i>)
Baking soda	Fine	Base	Yes	No	No
Corn starch	Fine	Neutral	No	No	Yes
Gelatin	Coarse	Acid	No	Yes	No
Salt	Coarse	Neutral	No	No	No

- _____ 36. What scientific question are you trying to answer in this problem?
- How can substance be identified based on chemical and physical properties?
 - Does the type of shoe change chemical and physical properties?
 - What substances characteristics are best for baking?
 - Is there a difference between the chemical and physical properties of baking ingredients?

Below are the findings from tests on the powders found on the bottom of the suspects shoes

Name	Appearance	Litmus	Vinegar (bubbles)	Biuret (protein)	Iodine (Starch)
Estaban	Coarse	Neutral	No	No	No
Tim	Fine	Neutral	No	No	Yes
Lisa	Coarse	Acid	No	Yes	No
Tammy	Fine	Base	Yes	No	No
Sally	Fine	Neutral	Yes	No	Yes

- _____ 37. What substance is on Tim's shoes?
- Baking Powder
 - Baking Soda
 - Corn Starch
 - Gelatin
 - Salt
- _____ 38. Based on the evidence, who is most the most likely suspect for stealing the cake?
- Estaban
 - Tim
 - Lisa
 - Tammy
 - Sally