

CHE 101 - Homework - Ch 2b
Periodic Table Basics

p. 44-56

Score: ____/60

Name: _____

Date: _____

[3 pt] 1. Who designed the periodic table. What principle(s) was used to determine where the elements are located (rows and columns)?

[2 pt] 2. List the Alkali metals. Which column in the periodic table are they contained in?

[2 pt] 3. List the element that are naturally found as gases (11).

[2 pt] 4. List the elements that are naturally found as diatomic molecules (7).

[4 pt] 5. List the 7 metalloids. Why is important to know them?

[5 pt] 6. What are some differences between metals and nonmetal? (List 5)

Property	Metal	Nonmetal
1.		
2.		
3.		
4.		
5.		

CHE 101 - Homework - Ch 2b

- [7 pt] 7. Label the following on the periodic table below:
(a) Alkali metals (b) Alkaline Earth metals (c) Transition metals (d) Halogens (e) Noble Gases (f) Actinides (h) Lanthinides

The periodic table grid consists of the following structure:

- Period 1: 2 cells
- Period 2: 8 cells
- Period 3: 8 cells
- Period 4: 18 cells (including the d-block)
- Period 5: 18 cells (including the d-block)
- Period 6: 32 cells (including the f-block)
- Period 7: 32 cells (including the f-block)
- Lanthanide series: 14 cells, positioned below the main body of the table.

- [3 pt] 8. Label the following on the periodic table below:

- (a) Liquids (b) Gases (c) Solid (just kidding there are too many!) (d) Metalloids

The periodic table grid consists of the following structure:

- Period 1: 2 cells
- Period 2: 8 cells
- Period 3: 8 cells
- Period 4: 18 cells (including the d-block)
- Period 5: 18 cells (including the d-block)
- Period 6: 32 cells (including the f-block)
- Period 7: 32 cells (including the f-block)
- Lanthanide series: 14 cells, positioned below the main body of the table.

CHE 101 - Homework - Ch 2b

[2 pt] 9. Define the term Compound:

[7 pt] 10. What are the differences between Ionic compounds and Covalent/Molecular compounds?

Property	Ionic	Covalent/Molecular
1. Formed by		
2. Between		
3. Bond Strength		
4. Melting Point		
5. Solubility		
6. Conductivity		
5. Structure		

[5 pt] 11. Identify the following compounds as either (I)onic or (M)olecular. Explain.

(a) Potassium Chloride (KCl) 11(a) _____

(b) Sugar (C₁₂H₂₂O₁₂) 11(b) _____

(c) Nitrogen Dioxide (NO₂) 11(c) _____

(d) Iron (III) Bromide (FeBr₃) 11(d) _____

(e) Water (H₂O) 11(e) _____

CHE 101 - Homework - Ch 2b

[2 pt] 12. What do subscripts mean in a chemical formula? Which subscript do we never use? Why?

[2 pt] 13. What do parenthesis mean in a chemical formula? How will we know when to use them?

[10 pt] 14. How many atoms of the indicated element are in each formula:

- | | |
|---|-------------|
| (a) Hydrogen in H_2SO_4 | 14(a) _____ |
| (b) Carbon in H_2CO_3 | 14(b) _____ |
| (c) Oxygen in H_2CO_3 | 14(c) _____ |
| (d) Nitrogen in $(\text{NH}_4)_2\text{SO}_4$ | 14(d) _____ |
| (e) Hydrogen in $(\text{NH}_4)_2\text{SO}_4$ | 14(e) _____ |
| (f) Oxygen in $(\text{NH}_4)_2\text{SO}_4$ | 14(f) _____ |
| (g) Nitrogen in NH_4NO_3 | 14(g) _____ |
| (h) Nitrogen HNO_3 | 14(h) _____ |
| (i) Hydrogen in $\text{HC}_2\text{H}_3\text{O}_2$ | 14(i) _____ |
| (j) Chlorine in CCl_4 | 14(j) _____ |

[4 pt] 15. Interpret the difference in meaning between the following pairs:

- (a) Si and SI

- (b) Pb and PB

- (c) 4P and P_4

- (d) CO and Co