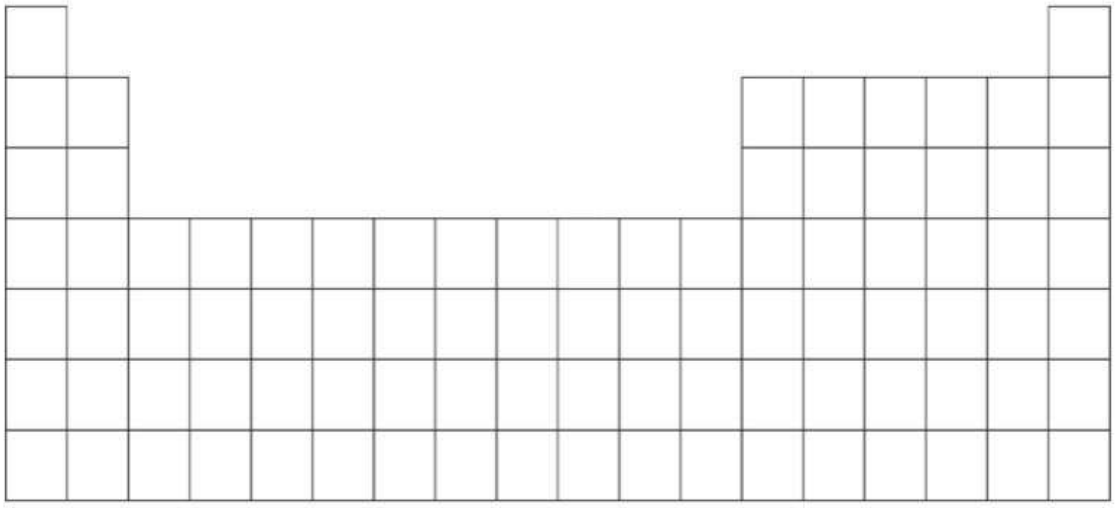
The Periodic Table

Directions: Leave no blanks. Guess if you must. This exam is out of 46 possible points. There are 4 pages in this assessment, 19 questions in all.

1. Based on what we have learned in class, describe the origin of the periodic table. Please use your own words. (3 points)

2. How does the "original" differ from today's? (1pt)

3. "Key" the three general areas for metals, nonmetals and metalloids on the blank periodic table below: (3 points)

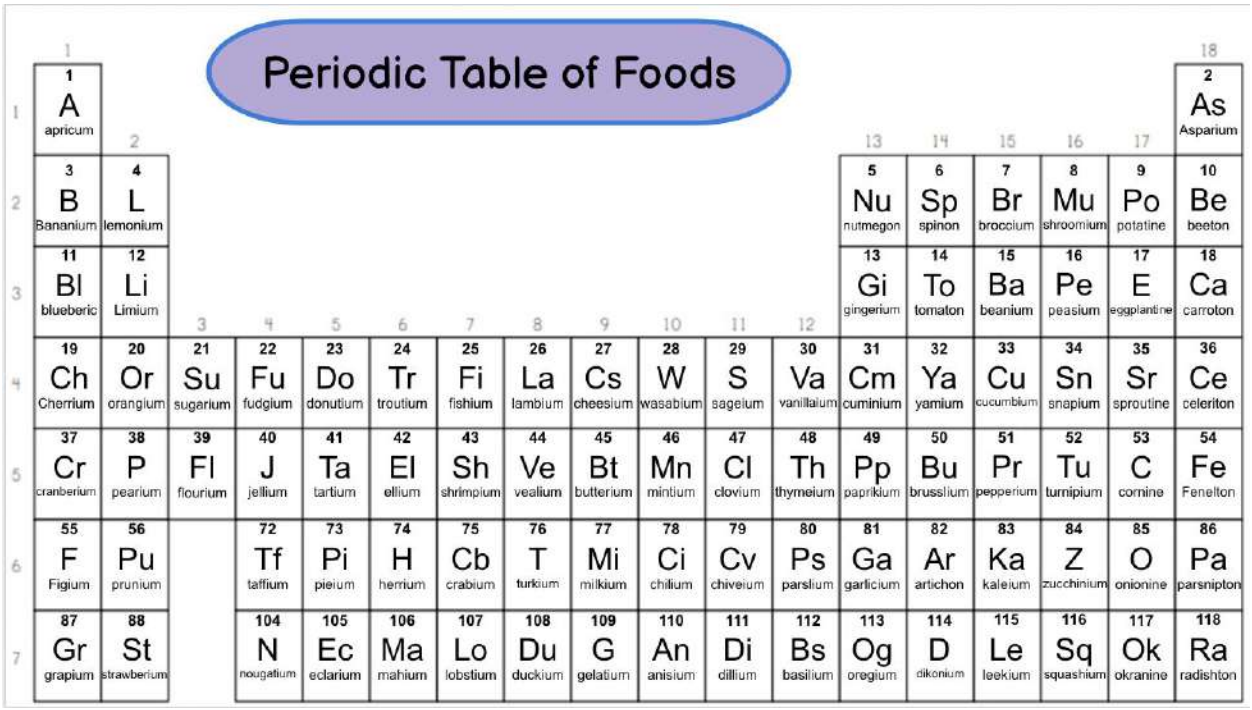


4. Number the Groups. (1pt)

5. Number the Periods. (1pt)

6. What do all the elements in a given row have in common? (1pt)

7. What do all the elements in a given column have in common? (1pt)



Apply your knowledge: Base your answers to questions 8 - 14 using the "Periodic Table of Foods"

8. Describe one characteristic you would expect the element **Li** to display, based on its location in the table. (1pt)

9. Describe one characteristic you would expect the element **Ca** to display, based on its location in the table. (1 pt)

10. Which atom, **B, Bl, Ch, or Cr,** would you expect to have the greatest ionization energy?(1pt) Give one reason to support your answer. (2 pt)

11. Which atom, **Sp, Br, Mu, or Nu,** would you expect to have the greatest electronegativity?(1) Give one reason to support your answer. (2 pt)

12. Which atom, **Gi, Li, E, or Pe,** would you expect to have the smallest atomic radius? (1 pt) Give one reason to support your answer. (2 pt)

13. Which atom, **Po, Br, Fe, or Bl**, would you expect to be the least chemically reactive ?(1)
Give one reason to support your answer. (2 pt)

14. Which atom, **St, As, Mu or Po,** would you expect to have the greatest metallic character?(1)
Give one reason to support your answer. (2 pt)

Use the Periodic Table found in your Chemistry Reference Tables to answer questions 15 - 19

15. When an atom gains an electron, what is its overall charge? (1 pt)

Give an example of an element whose atoms would easily gain an electron(s). (1 pt)

What do you think happens to the radius of that atom when it becomes an ion? (1 pt)

16. Compare **Zn to C**.

Which one would you expect to be brittle? (1 pt)
Why? (1 pt)

Which one would you expect to be a good conductor of electricity? (1pt)
Why?(1pt)

17a) Write the electron configuration of an element of your choice from period 3. Do <u>not</u> choose a Noble Gas. (2 pt)

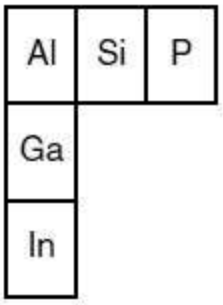
b) Name the element. (1 pt)

c) Does an atom of the element have a tendency to gain or lose electrons? (1)

d) How does an atom of the element compare in size to its ion? (1)

Examine the diagram below.

18. What happens to ionization energy when moving from right to left? (1 pt)
Why? (2pt)



19. What happens to electronegativity when moving from right to left? (1 pt)
Why? (2 pts)