

Unit 4: The Periodic Table and Periodicity

Name: _____
Text Questions from Wilbraham, et. al.

6.1

1. How were the elements grouped in Dobereiner's classification system?
2. List two reasons why Mendeleev is given more credit than Meyer for creating the periodic table.
3. By what property did Mendeleev arrange the elements in his table?
4. List two things Mendeleev predicted using his periodic table.
5. The problem Mendeleev ran into was not with atomic masses themselves, but rather with using the atomic masses to...
6. How did Moseley arrange the elements, in what became the modern periodic table?
7. What is the periodic law?
8. What are the three broad classes of elements?
9. About what percentage of the elements are metals?
10. Where are the nonmetals located on the periodic table?
11. Relative to the metals and nonmetals, where are the metalloids located?

6.2

12. Why is the symbol for sodium printed in black?
13. List the chemical symbols of all of the... ...alkaline earth metals. ...noble gases.

14. For the noble gases, what is unique about the s and p sublevels?

15. Transition metals are characterized by the presence of electrons in...

16. The inner transition metals are characterized by...

17. Each period on the periodic table corresponds to what?

6.3

18. Why can the radius of an atom NOT be measured directly?

19. How do we define the atomic radius?

20. How does atomic size change in going from left to right across a period?

21. Why is an atom electrically neutral?

22. When are ions formed?

23. What is a cation?

24. What do nonmetals tend to do to form ions?

25. What is an anion?

26. What is ionization energy?

27. What do first ionization energies tend to do as we go down a group from top to bottom?

28. Why do the Group 1A metals tend to form ions with a $1+$ charge?

29. As we go across a period, what happens to... ...nuclear charge? ...shielding effect?

30. Cations are always _____ than the atoms from which they form; anions are always _____.

31. Why are the electrons drawn closer to the nucleus when a sodium atom loses an electron?

32. As the number of electrons _____, the attraction of the nucleus for any one electron decreases.

33. What is electronegativity?

34. What is the unit for values of electronegativity?

35. Which elements have low electronegativities?

Which elements have high electronegativities?

36. The most electronegative element is _____, with a value of _____. The least electronegative element is _____, with a value of _____.

37. How do we explain the trends that exist among elements' properties?