NAME KEY DATE PER

ATOMIC STRUCTURE PRACTICE TEST #3

THERE MAY BE MORE THAN ONE CORRECT ANSWER TO THE QUESTIONS BELOW.

1. Which subatomic particle is located in the nucleus?
a) protons b) electrons c) neutrons

2. Which subatomic particle is located outside the nucleus?
a) protons b) electrons c) neutrons

3. Which subatomic particle has the least mass?
a) protons b) electrons c) neutrons

4. Which subatomic particle is represented by the atomic number?
a) protons b) electrons c) neutrons

5. Which subatomic particle is represented by the mass number?
a) protons b) electrons c) neutrons

6. Which subatomic particle account for the charge of an atom?
a) protons b) electrons c) neutrons

7. Which subatomic particle is responsible for the reactivity of an element?
a) protons b) electrons c) neutrons

8. Which subatomic particle has a charge of +1?
a) protons b) electrons c) neutrons

9. Which subatomic particle has a charge of –1?
a) protons b) electrons c) neutrons

10. Which subatomic occupy orbitals that surround the nucleus?
a) protons b) electrons c) neutrons

11. What is the maximum number of electrons that can exist an any p ***sublevel***?
a. 1 b.2 c. 3 d. 4 e. 5 f. 6

12. What is the maximum number of electrons that can exist an any f ***orbital***?
a. 1 b.2 c. 4 d. 6 e. 14 f. 18

13. Using the wavelengths of light given off by electrically charged atoms to identify the elements is an example of an_____ spectrum.
a. electron b. orbital c. absorption d. emission

14. Measuring the wavelengths of light absorbed by a solution to identify the elements is an example of an _____ spectrum.
a. electron b. orbital c. absorption d. emission

15. Which of the following is a valid sublevel designation?
a. 1p b. 2d c. 4s d. 3f e. 2f

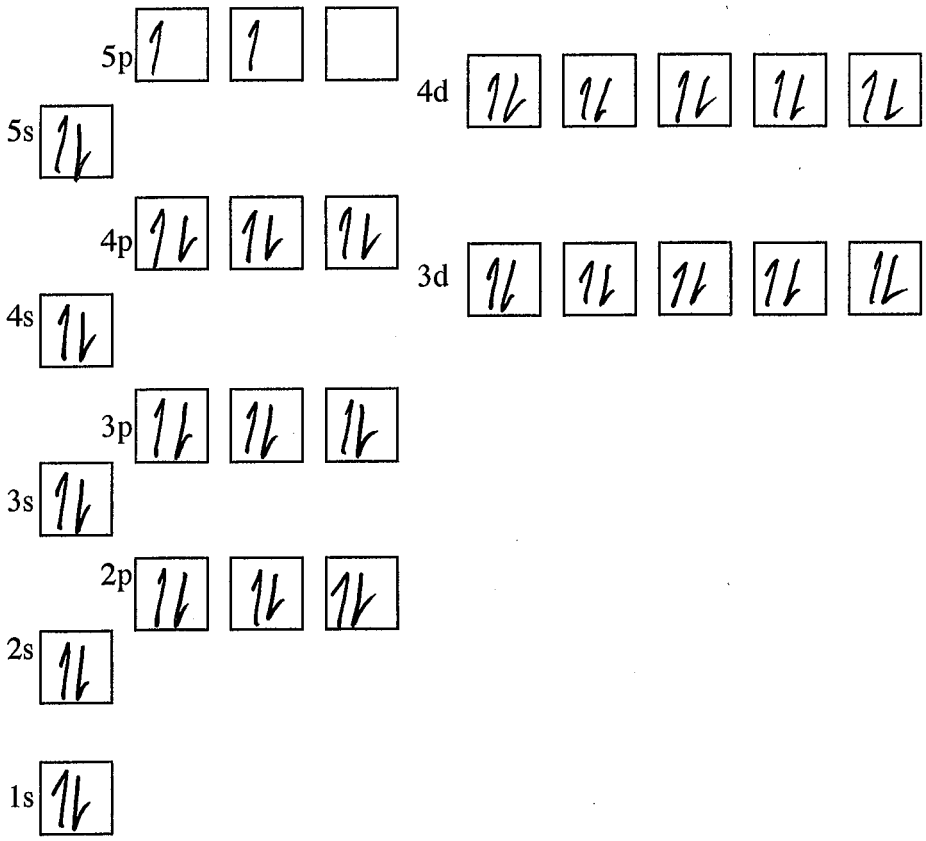
16. ATOMS

Nuclear Symbol	Atomic #	Mass #	# p^+	#e^-	#n^0	Hyphen Notation
$^{27}_{13}Al$	13	27	13	13	14	Aluminum-27
$^{207}_{82}Pb$	82	207	82	82	125	Lead-207
$^{88}_{38}Sr$	38	88	38	38	50	STRONTIUM-88

17. IONS

Nuclear Symbol	Atomic #	Mass #	# p^+	#e^-	#n^0	Charge
$^{113}_{48}Cd^{+2}$	48	113	48	46	65	+2
$^{72}_{33}As^{-3}$	33	72	33	36	39	-3
$^{23}_{11}Na^{+1}$	11	23	11	10	12	+1

18. Fill the orbital diagram for Sn



19. Write the complete electron configuration for I.

$1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^2 4d^{10} 5p^5$

20. Write the complete electron configuration for the Al.

$1s^2 2s^2 2p^6 3s^2 3p^1$

21. Write the noble gas electron configuration (shorthand) notation of Ge.

$[Ar]\ 4s^2 3d^{10} 4p^2$

22. Write the noble gas electron configuration (shorthand) notation of In.

$[Kr]\ 5s^2\ 4d^{10} 5p^1$

23. Write the outer electron configuration (battleship notation) for Pd (only the last sublevel).

$4d^8$

24. What is the outer electron configuration (battleship notation) for Te (only the last sublevel).

$5p^4$

25. Use the following data to calculate the average atomic mass of lead.

ISOTOPES	MASS (amu)	Percent Abundance
Pb-206	205.946	9.35
Pb-207	206.941	73.8
Pb-208	207.941	14.5
Pb-209	208.939	2.35

SHOW YOUR WORK AND CIRCLE FINAL ANSWER.

$$\frac{(205.946 \cdot 9.35) + (206.941 \cdot 73.8) + (207.941 \cdot 14.5) + (208.939 \cdot 2.35)}{100} =$$

$= 207.0399 \text{ amu}$