

HONORS - ELECTRON CONFIGURATION PRACTICE

In the space below, write the full (unabbreviated) electron configurations of the following elements:

- 1) Na $1s^2 2s^2 2p^6 3s^1$ Odds ONLY
- 2) Fe $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^6$ ONLY
- 3) Br⁻¹ $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6$ (Full)
- 4) Ba⁺² $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^2 4d^{10} 5p^6$ (Full)
- 5) Np $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^2 4d^{10} 5p^6 6s^2 4f^{14} 5d^{10} 6p^6 7s^2 5f^5$

In the space below, write the Noble Gas (abbreviated) electron configurations of the following elements:

- 6) Co $[Ar] 4s^2 3d^7$
- 7) Ag $[Kr] 5s^2 4d^9$
- 8) Te $[Kr] 5s^2 4d^{10} 5p^4$
- 9) Fr⁺¹ $[Rn]$
- 10) Cl⁻¹ $[Ar]$

Determine what elements are denoted by the following electron configurations:

- 11) $1s^2 2s^2 2p^6 3s^2 3p^4$ S
- 12) $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^1$ Rb
- 13) $[Kr] 5s^2 4d^{10} 5p^3$ Sb
- 14) $[Xe] 6s^2 4f^{14} 5d^6$ Os
- 15) $[Rn] 7s^2 5f^{11}$ Es

State whether the following electron configurations is valid or invalid. If invalid, correct it!

- 16) $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 4d^{10} 4p^5$ 3
- 17) $1s^2 2s^2 2p^6 3s^3 3d^5$ $1s^2 2s^2 2p^6 3s^2 3p^6$ p?
- 18) $[Ra] 7s^2 5f^8$ Rn
- 19) $[Kr] 5s^2 4d^{10} 5p^5$!!
- 20) $[Xe]$!!

Electron Configurations

Name _____ Pd _____

LONGHAND ELECTRON CONFIGURATION

Use the patterns within the periodic table to write longhand electron configurations for the following atoms.

Symbol	# e ⁻	Longhand Electron Configuration	Group 18/ Noble Gas Abbreviations
1. Mg	12	$[1s^2 2s^2 2p^6] 3s^2 = [Ne] 3s^2$	
2. P		$[Ne] 3s^2 3p^3$	
3. V	23	$[1s^2 2s^2 2p^6 3s^2 3p^6] 4s^2 3d^3 = [Ar] 4s^2 3d^3$	
4. Ge		$[Ar] 4s^2 3d^{10} 4p^2$	
5. Kr	36	$1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 =$ * Full outer energy level $[Kr]$	
* 6. U		$[1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^2 4d^{10} 5p^6 6s^2 4f^{14} 5d^{10} 6p^6] 7s^2 5f^4 = [Rn] 7s^2 5f^4$	