

Electron Configurations Practice #2: *Orbital Notation*

Name: _____

Part I: Write the orbital notation (orbital diagram) electron configuration of the following elements. Be sure to include the long-hand electron configuration notation underneath each orbital notation.

1) Magnesium _____

2) Cobalt _____

3) Krypton _____

4) Chlorine _____

5) Scandium _____

Part II: Write the long-hand electron configuration notation of the following elements:

6) Nickel _____

7) Cadmium _____

8) Selenium _____

9) Strontium _____

10) Lithium _____

Part III: Determine the identity of the element that is denoted by each of the following electron configurations. Include element name with correct spelling AND element symbol in parenthesis.

11) $1s^2 2s^2 2p^6 3s^2 3p^5$ _____

12) $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^2$ _____

13) $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^2 4d^{10} 5p^4$ _____

14) $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^2 4d^{10} 5p^6 6s^2 4f^{14} 5d^7$ _____

15) $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^2 4d^{10} 5p^6 6s^2 4f^{14} 5d^{10} 6p^6 7s^2 5f^{12}$ _____

Part IV: VALID or INVALID electron configurations? If INVALID, rewrite the CORRECT long-hand notation so that it contains the SAME number of electrons as the original electron configuration.

16) $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 4d^{10} 4p^6$ _____

→ Correct electron configuration: _____

17) $1s^2 2s^2 2p^6 3s^3 3d^6$ _____

→ Correct electron configuration: _____

18) $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^2 4d^{10} 5p^4 6s^2 4f^{14}$ _____

→ Correct electron configuration: _____

19) $1s^2 2s^2 2p^6 3s^2 3p^8$ _____

→ Correct electron configuration: _____

20) $1s^2 2s^2 2p^6 3p^5 3s^2 3s^2$ _____

→ Correct electron configuration: _____