

Name _____

Period _____

Pre-AP Chemistry, Grade 10

Test 2 - Practice

Answer Sheet:

(20)

I. Multiple Choice

1. D

2. C

3. C

4. D

5. B

6. B

7. D

8. D

9. D

10. B

11. B

12. E

13. D

14. A

15. C

16. C

17. D, E, C

18. A

19. B

20. D, E

* On # 17, I only gave credit for D and E at first. Please see me if you put C and deserve an extra point.

(9)

II. Free Response

1.

Electron Configuration

Box Diagram

Rules Violated

a) N: $[\text{He}] 2s^2 2p^3$

$[\text{He}] \begin{array}{|c|} \hline \uparrow\downarrow \\ \hline 2s \\ \hline \end{array} \begin{array}{|c|c|c|} \hline \uparrow & \uparrow & \uparrow \\ \hline 2p \\ \hline \end{array}$

GR HR PE

b) Cr^{3+} : $[\text{Ar}] 3d^3$

$[\text{Ar}] \begin{array}{|c|c|c|c|} \hline \uparrow & \uparrow & \uparrow & \uparrow \\ \hline 3d \\ \hline \end{array}$

GR HR PE

c) S^{2-} : $[\text{Ne}] 3s^2 3p^6$
[Ar]

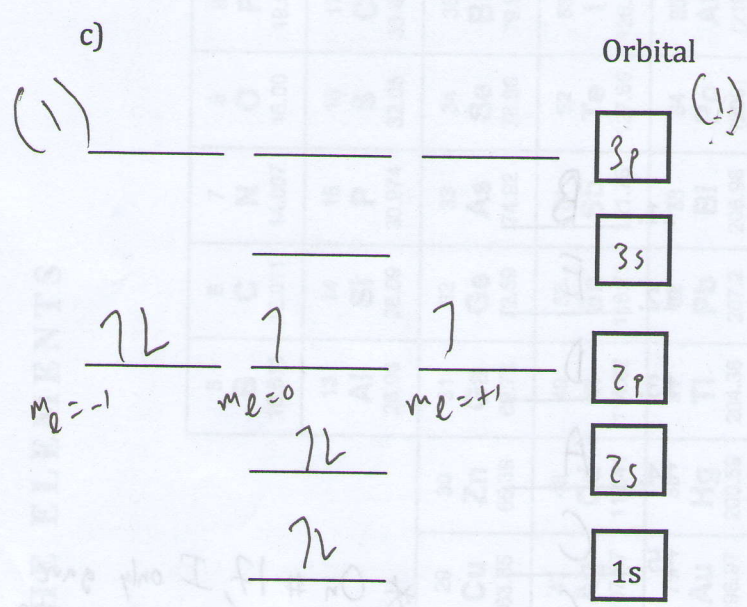
$[\text{Ne}] \begin{array}{|c|} \hline \uparrow\downarrow \\ \hline 3s \\ \hline \end{array} \begin{array}{|c|c|c|} \hline \uparrow\downarrow & \uparrow\downarrow & \uparrow\downarrow \\ \hline 3p \\ \hline \end{array}$

GR HR PE

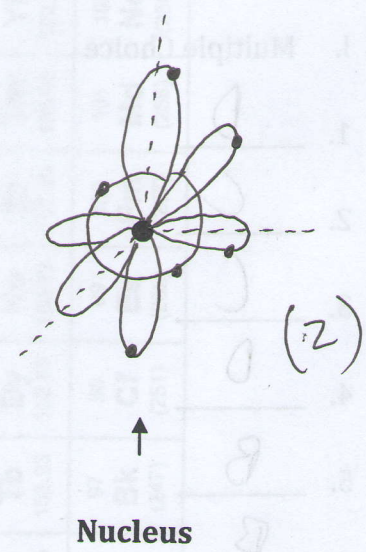
* I did not take points off if you did not circle GR for every answer, but you really should

(7) 2. a) $O: [He] 2s^2 2p^4$ (1)

b) Valence Orbitals: $2s, 2p$ (1)



Energy-Level Diagram



Orbital Diagram

(1) e) Is O magnetic? (Circle One) Yes No

(2) f)

n	l	m_l	m_s
2	1	+1	+1/2
2	1	0	+1/2

(8) g)

Question	Atom or Ion	Magnetic (Y or N)?	Unpaired e Orbitals
i	O^{2-}	N	—
ii	P	Y	$3p (m_l = -1, m_l = 0, m_l = +1)$
iii	Ti	Y	$3d (m_l = -2, m_l = -1)$
iv	Ti^{2+}	Y	$3d (m_l = -2, m_l = -1)$

