Quiz VI General Chemistry I Lecture Fall 13 Dr. Hahn 20 pts 11/11 M 9:30 am Form A quiz # blue

Name Cey (print name) Name _____ (sign name) Please show all work for full (& partial) credit

1. Periodic trends: (10 pts, 2 pts each)

a. Circle the larger (higher radius) element: [(Si) or (Sn)] (circle one) down group - bigger

b. Circle the element with the higher ionization energy: [(K) or (Ca)] (circle one)
(opposite to size, across period smaller size - large IE)

c. Circle the element with the higher electronegativity: [(C) or (N)] (circle one)
F most EN

d. Circle the larger of the two choices: [(Na) or (Na^+)] (circle one)
+ ion smaller

e. Circle the more reactive metal (in reaction where the metal is oxidized): [(Ca) or (Be)] (circle one)
(down group - more reactive)

2. Give the Lewis Dot Symbol for the element **F** Make sure the dots are clearly visible. (5 pts)

F in group VII A has 7 valence $\bar{e}$, 7 dots, 4 walls

3. Give the electron configuration for the ion shown: Se^{-2} (5 pts)

$1s^2, 2s^2, 2p^6, 3s^2, 3p^6, 4s^2, 3d^{10}, 4p^4$ – Se

[Ar] $4s^2, 3d^{10}, 4p^4$ – Se

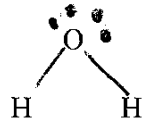
$Se^{-2} \rightarrow$ [Ar] $4s^2, 3d^{10}, 4p^6$

negative charge - more $\bar{e}$

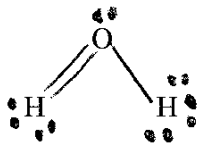
Extra Credit: The number of valence electrons in H_2O is 8 (2 pts) (show work)

valence $\bar{e}$ = 2(1) + 6 = 8$\bar{e}$
(H, O)

Which of the two Lewis Dot structures is the correct structure [(a) or (b)] (circle one) (1 pt)



(a) 4 x 2 = 8$\bar{e}$



(b) 9 x 2 = 18$\bar{e}$ too many $\bar{e}$

H can only have duet

Quiz VI General Chemistry I Lecture Fall 13 Dr. Hahn 20 pts 11/11 M 9:30 am Form B quiz # _____

Name Key (print name) Name _____ (sign name) Please show all work for full (& partial) credit

1. Periodic trends: (10 pts, 2 pts each)

a. Circle the larger (higher radius) element: [(Sr) or (Be)] (circle one)
down group - larger

b. Circle the element with the higher ionization energy: [(C) or (O)] (circle one)
IE - opposite to size - across period smaller size but larger IE

c. Circle the element with the higher electronegativity: [(Br) or (Cl)] (circle one)
most EN is F

d. Circle the larger of the two choices: [(Cl) or (Cl^{-1})] (circle one)
negative ion is bigger

e. Circle the more reactive metal (in reaction where the metal is oxidized): [(Li) or (K)] (circle one)

2. Give the Lewis Dot Symbol for the element ~~Si Make sure the dots are clearly visible.~~ (5 pts)

Si in group IV A — 4 Valence $\bar{e}$ 4 dots 1 per each of 4 walls

3. Give the electron configuration for the ion shown: Ca^{+2} (5 pts)

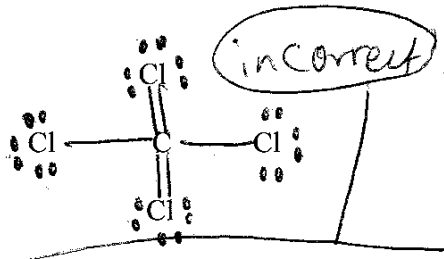
$1s^2, 2s^2, 2p^6, 3s^2, 3p^6, 4s^2$ — Ca
or $[Ar]\,4s^2$

+2 remove $2\bar{e}$ — [Ar] or $1s^2, 2s^2, 2p^6, 3s^2, 3p^6$ — Ca^{2+}

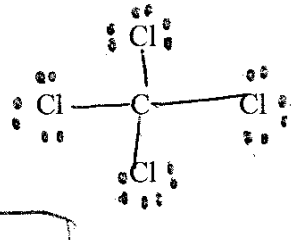
Extra Credit: ~~The number of valence electrons in CCl_4~~ is 32 (2 pts) (show work)

C Cl
$4 + 4(7) = 32$

Which of the two Lewis Dot structures is the correct structure [(a) or (b)] (circle one) (1 pt)



incorrect



(a) $18 \times 2 = 36\bar{e}$ too many C + Cl has more than octet, C not able bc n=2 has no d subshell

(b) $16 \times 2 = 32\bar{e}$

Quiz VI General Chemistry I Lecture Fall 13 Dr. Hahn 20 pts 11/11 M 10:30 am Form A quiz # blue

Name Key (print name) Name _____ (sign name) Please show all work for full (& partial) credit

1. Periodic trends: (10 pts, 2 pts each)

a. Circle the larger (higher radius) element: [(P) or (Cl)] (circle one)

across period - smaller size

b. Circle the element with the higher ionization energy: [(Al) or (Tl)] (circle one)

IE opposite to size - larger down group → IE smaller down group

c. Circle the element with the higher electronegativity: [(Se) or (S)] (circle one)

most EN is (F)

d. Circle the larger of the two choices: [(Fe) or (Fe^{+3})] (circle one)

cation is smaller

e. Circle the more reactive metal (in reaction where the metal is oxidized): [(Na) or (Mg)] (circle one)

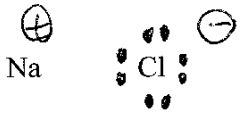
more reactive down group

2. Give the Lewis Dot Symbol for the element **Ne** Make sure the dots are clearly visible. (5 pts)

Ne in group ~~VIII~~ A, 8 valence $\bar{e}$

8 dots on 4 walls

3. Give the Lewis Dot Structure for the ionic bonding for: (5 pts)



Na^+ loses 1 $\bar{e}$, Cl^- picks up one $\bar{e}$

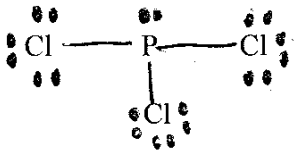
$Na \rightarrow Na^+$

$Cl \rightarrow Cl^-$

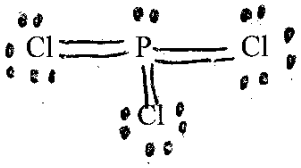
Extra Credit: The number of valence electrons in **PCl_3** is 26 (2 pts) ~~(show work)~~

$5 + 3(7) = 26$ (P, Cl)

Which of the two Lewis Dot structures is the correct structure [(a) or (b)] (circle one) (1 pt)



(a) $13 \times 2 = 26\bar{e}$ correct #e & all octets



(b) $16 \times 2 = 32\bar{e}$ too many $\bar{e}$, Pt Cl has more than octet

Quiz VI General Chemistry I Lecture Fall 13 Dr. Hahn 20 pts 11/11 M 10:30 am Form B quiz # _____

Name Key (print name) Name _____ (sign name) Please show all work for full (& partial) credit

1. Periodic trends: (10 pts, 2 pts each)

a. Circle the larger (higher radius) element: [(Ga) or (Br)] (circle one)

size decreases across period

b. Circle the element with the higher ionization energy: (Ba) or (Be)] (circle one)

IE opposite to size, down group Bigger size, smaller IE

c. Circle the element with the higher electronegativity: [(Si) or (S)] (circle one)

F is most EN

d. Circle the larger of the two choices: [(S) or (S^{-2})] (circle one)

anion is bigger

e. Circle the more reactive metal (in reaction where the metal is oxidized): [(K) or (Ca)] (circle one)

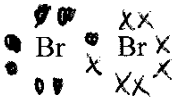
Li

reactivity increases down group

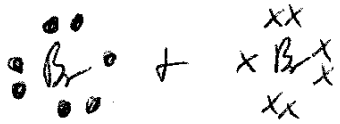
2. Give the Lewis Dot Symbol for the element **In** Make sure the dots are clearly visible. (5 pts)

In is in group IIIA, 3 valence $\bar{e}$, 3 dots on 4 walls

3. Give the Lewis Dot Structure for the covalent bonding for: (5 pts)



Unbonded Br



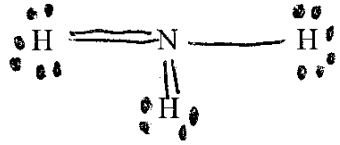
Extra Credit: The number of valence electrons in **NH_3** is 8 (2 pts) (show work)

$5 + 3(1) = 8$

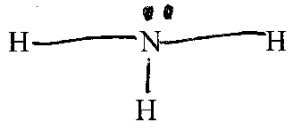
N H

Which of the two Lewis Dot structures is the correct structure [(a) or (b)] (circle one) (1 pt)

incorrect



correct



(a) $13 \times 2 = 26\bar{e}$ too many $\bar{e}$'s H cannot have more than duet N cannot have more than octet

(b) $4 \times 2 = 8\bar{e}$, H has duet, N has octet & correct # $\bar{e}$

Quiz VI General Chemistry I Lecture Fall 13 Dr. Hahn 20 pts 11/11 M 9:30 am Form A quiz # 4-12

Name _____ Name _____
(print name) (sign name) Please show all work for full (& partial) credit

1. Periodic trends: (10 pts, 2 pts each)

a. Circle the larger (higher radius) element: [(Si) or (Sn)] (circle one)

b. Circle the element with the higher ionization energy: [(K) or (Ca)] (circle one)

c. Circle the element with the higher electronegativity: [(C) or (N)] (circle one)

d. Circle the larger of the two choices: [(Na) or (Na^+)] (circle one)

e. Circle the more reactive metal (in reaction where the metal is oxidized): [(Ca) or (Be)] (circle one)

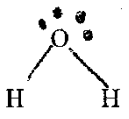
2. Give the Lewis Dot Symbol for the element **F** Make sure the dots are clearly visible. (5 pts)

F

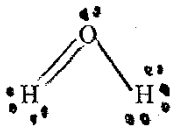
3. Give the electron configuration for the ion shown: Se^{-2} (5 pts)

Extra Credit: The number of valence electrons in H_2O is _____ (2 pts) (show work)

Which of the two Lewis Dot structures is the correct structure [(a) or (b)] (circle one) (1 pt)



(a)



(b)

Quiz VI General Chemistry I Lecture Fall 13 Dr. Hahn 20 pts 11/11 M 9:30 am Form B quiz # 5-3

Name _____ Name _____
(print name) (sign name) Please show all work for full (& partial) credit

1. Periodic trends: (10 pts, 2 pts each)

a. Circle the larger (higher radius) element: [(Sr) or (Be)] (circle one)

b. Circle the element with the higher ionization energy: [(C) or (O)] (circle one)

c. Circle the element with the higher electronegativity: [(Br) or (Cl)] (circle one)

d. Circle the larger of the two choices: [(Cl) or (Cl^{-1})] (circle one)

e. Circle the more reactive metal (in reaction where the metal is oxidized): [(Li) or (K)] (circle one)

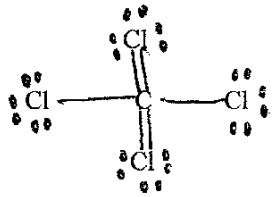
2. Give the Lewis Dot Symbol for the element **Si** Make sure the dots are clearly visible. (5 pts)

Si

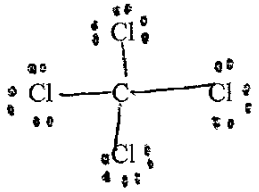
3. Give the electron configuration for the ion shown: $\mathbf{Ca^{+2}}$ (5 pts)

Extra Credit: The number of valence electrons in $\mathbf{CCl_4}$ is _____ (2 pts) (show work)

Which of the two Lewis Dot structures is the correct structure [(a) or (b)] (circle one) (1 pt)



(a)



(b)

Quiz VI General Chemistry I Lecture Fall 13 Dr. Hahn 20 pts 11/11 M 10:30 am Form A quiz # 1-6

Name _____ Name _____
(print name) (sign name) Please show all work for full (& partial) credit

1. Periodic trends: (10 pts, 2 pts each)

a. Circle the larger (higher radius) element: [(P) or (Cl)] (circle one)

b. Circle the element with the higher ionization energy: [(Al) or (Tl)] (circle one)

c. Circle the element with the higher electronegativity: [(Se) or (S)] (circle one)

d. Circle the larger of the two choices: [(Fe) or (Fe^{+3})] (circle one)

e. Circle the more reactive metal (in reaction where the metal is oxidized): [(Na) or (Mg)] (circle one) Rb

2. Give the Lewis Dot Symbol for the element **Ne** Make sure the dots are clearly visible. (5 pts)

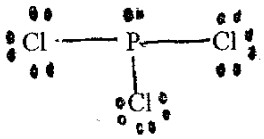
Ne

3. Give the Lewis Dot Structure for the ionic bonding for: (5 pts)

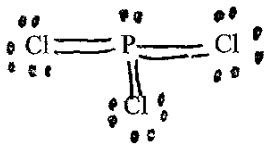
Na Cl

Extra Credit: The number of valence electrons in **PCl_3** is _____ (2 pts) (show work)

Which of the two Lewis Dot structures is the correct structure [(a) or (b)] (circle one) (1 pt)



(a)



(b)

Quiz VI General Chemistry I Lecture Fall 13 Dr. Hahn 20 pts 11/11 M 10:30 am Form B quiz # 1-7

Name _____ Name _____
(print name) (sign name) Please show all work for full (& partial) credit

1. Periodic trends: (10 pts, 2 pts each)

a. Circle the larger (higher radius) element: [(Ga) or (Br)] (circle one)

b. Circle the element with the higher ionization energy: [(Ba) or (Be)] (circle one)

c. Circle the element with the higher electronegativity: [(Si) or (S)] (circle one)

d. Circle the larger of the two choices: [(S) or (S^{-2})] (circle one)

e. Circle the more reactive metal (in reaction where the metal is oxidized): [(K) or (Li)] (circle one)

2. Give the Lewis Dot Symbol for the element **In** Make sure the dots are clearly visible. (5 pts)

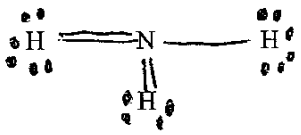
In

3. Give the Lewis Dot Structure for the covalent bonding for: (5 pts)

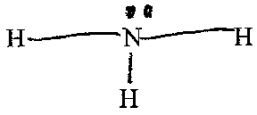
Br Br

Extra Credit: The number of valence electrons in $\mathbf{NH_3}$ is _____ (2 pts) (show work)

Which of the two Lewis Dot structures is the correct structure [(a) or (b)] (circle one) (1 pt)



(a)



(b)