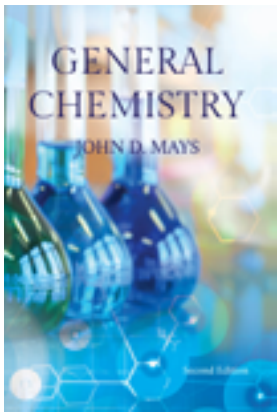
General Chemistry



Errata

We always strive to make our textbooks as accurate as possible, but sadly, errors are a reality. We very much appreciate friends who report errata that are not included in this document!
Please send new errata to info@novarescienceandmath.com

Last revised: June 13, 2020

General Chemistry, 2nd Edition (2016)

Chapter2

12. Atomic mass of silicon totals to 28.055.

33c 2.91×10^{22} atoms.

Chapter 3 Exercises

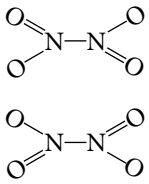
20i. This item should be neodymium.

23 The third answer should be No: $[Rn]7s^2 5f^{14}$

38. Units in the answer should be cm3.

46e. Correct answer is 1300.05 bar

Chapter 5 Exercises

13 o. 

N_2O_4

20a. the Be—F bond is ionic.

Chapter 7 Exercises

14i. Reaction products should be LiI(aq) and K(s)

20. The question should say that the reaction takes place in excess *carbon monoxide*.

Chapter 9 Exercises

14b. 4.20×10^2 kg

Chapter 10 Exercises

34. First answer is 3.46 m

46. 8.50 atm

Chapter 11 Exercises

4g. Answer is diprotic.

21. Add the following note to the answers given in the text: These answers all show the formation of carbonic acid, H_2CO_3. This acid is unstable and immediately breaks down to CO_2 and water. Thus, each equation could be shown as: ...+ CO_2 + H_2O.

25. The first two sentences of the question should read: According to the activity series of metals (Table 7.2), copper does not react with sulfuric acid. However, if the acid is hot enough and concentrated enough, copper reacts with H_2SO_4 in a single-replacement reaction.

28. Item (g) is basic.

Chapter 12 Exercises

For exercise 2, the following descriptions should accompany the equations in the answer key.

a. Not a redox reaction.
b. Cl is reduced; it is the oxidizing agent. O is oxidized; it is the reducing agent.
c. S is reduced; it is the oxidizing agent. Br is oxidized; it is the reducing agent.
d. Not a redox reaction.
e. Cl is reduced; it is the oxidizing agent. I is oxidized; it is the reducing agent.
f. N is reduced; it is the oxidizing agent. S is oxidized; it is the reducing agent.

For exercise 7, the following descriptions should accompany the equations in the answer key.

a. oxidizing agent: Fe; reducing agent: S
b. oxidizing agent: Cl; reducing agent: I
c. oxidizing agent: Mn; reducing agent: C
d. oxidizing agent: Cl; reducing agent: O
e. oxidizing agent: N; reducing agent: Al
f. oxidizing agent: Mn; reducing agent: Cl
g. oxidizing agent: N; reducing agent: S
h. oxidizing agent: Mn; reducing agent: Br

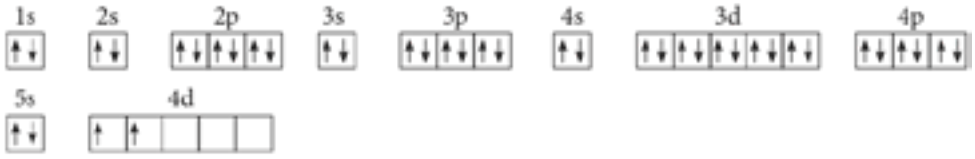
Digital Resources/Resource CD

Exam 2

6. Answer should be 60.052 g/mol

Exam 3

1b.



Quiz 5

2. Result should be rounded to hundredths place, giving 24.31.

Fall Semester Exam

1d. The compound should be Cl_2O. The answer given is for this compound.

4. Our given solution is correct except for the final result, which should be 1.549×10^{-19} J.

10. The molecular mass of propane used in our solution is incorrect. It should be 44.096 g/mol, giving a result of 8.194×10^{25} carbon atoms.

20. Correct answer is $Mg < Ca < Sr^{2+} < Sr < Ba^{2+}$

Spring Semester Exam

7b The ionic equation should have $2Ag^{+}(aq)$ on both sides (not $2Ag^{2+}(aq)$)

General Chemistry, 1st edition (2014)

Chapter 1 Answer Key

8f. $$739.22 \ \frac{\text{ft}^3}{\text{s}} \cdot \frac{7.48052 \text{ gal}}{1 \text{ ft}^3} \cdot \frac{3600 \text{ s}}{1 \text{ hr}} = 19{,}907{,}000 \ \frac{\text{gal}}{\text{hr}}$$

Chapter 4 Exercises

10. The problem statement should refer to cesium (Cs).

Answer: Mg < Na < Ba < Cs

Chapter 2 Text

Example 2.6: Oxygen should be 2 x 15.9994 = 31.9988

Answer: Molar Mass = 60.052 g/mol

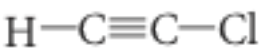
Chapter 3 Exercises

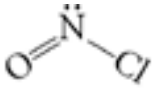
46e. Correct answer is 1300.05 bar

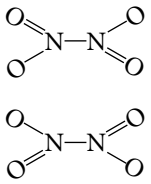
Chapter 4 Text

p. 104 The opening of the first paragraph should read, "The first 92 elements...are found in nature. Elements 93–118 have been synthesized in laboratories..."

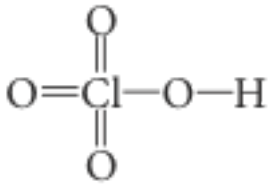
Chapter 5 Answer Key

13a. Should have a triple bond. 

13l. NOCl 



13 o. N_2O_4



13s. $HClO_4$

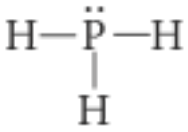
17d. perchloric acid

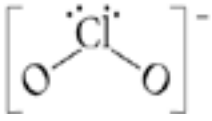
17f. bromous acid

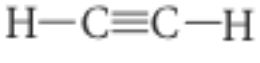
18i. $Cr(SO_3)_3$ chromium(VI) sulfite

20a. The Be—F bond is ionic

Chapter 6 Answer Key

3a. phosphine, PH_3  tetrahedral/pyramidal

3g. ClO_2^-  tetrahedral/bent

3i. acetylene, C_2H_2  linear/linear

Chapter 7 Answer Key

14d. $2Al(s) + 3H_2SO_4(aq) \rightarrow Al_2(SO_4)_3(aq) + 3H_2(g)$

14f. $Ba(s) + 2H_2O(l) \rightarrow Ba(OH)_2(aq) + H_2(g)$

19a. 0.029 mol HCl

19b. 0.52 g H_2O

Chapter 8 text

p. 219 The definition of the molar heat of vaporization should be “the quantity of heat required to boil or condense one mole of the substance.” (The definition is correct in the table on the same page.)

$$20.87 \text{ mL} \cdot \frac{1 \text{ L}}{1000 \text{ mL}} \cdot 4.077 \times 10^{-2} \ M = 8.509 \times 10^{-4} \text{ mol } HClO_4$$

$Ca(OH)_2$ provides two moles of OH^- ions for each mole of $Ca(OH)_2$. So only half as many moles of $Ca(OH)_2$ are required to neutralize $HClO_4$.

$$\frac{8.509 \times 10^{-4} \text{ mol } HClO_4}{2} \rightarrow 4.254 \times 10^{-4} \text{ mol } Ca(OH)_2$$

$$M_{Ca(OH)_2} \cdot 22.94 \text{ mL} \cdot \frac{1 \text{ L}}{1000 \text{ mL}} = 4.254 \times 10^{-4} \text{ mol } Ca(OH)_2$$

35c. $$M_{Ca(OH)_2} = \frac{4.254 \times 10^{-4} \text{ mol } Ca(OH)_2}{0.02294 \text{ L}} = 0.01855 \ M \ Ca(OH)_2$$

General Chemistry Solutions Manual

Chapter 3

46e. Correct answer is 1300.05 bar

Chapter 7

$$750 \text{ mg } Al(OH)_3 \cdot \frac{1 \text{ g}}{1000 \text{ mg}} \cdot \frac{\text{mol}}{78.0034 \text{ g}} = 0.00961 \text{ mol } Al(OH)_3$$

19a. $$0.00961 \text{ mol } Al(OH)_3 \cdot \frac{3 \text{ mol HCl}}{1 \text{ mol } Al(OH)_3} = 0.0288 \text{ mol HCl}$$

Rounding this result to 2 sig digs gives 0.029 mol HCl.

$$750 \text{ mg } Al(OH)_3 \cdot \frac{1 \text{ g}}{1000 \text{ mg}} \cdot \frac{\text{mol}}{78.0034 \text{ g}} = 0.00961 \text{ mol } Al(OH)_3$$

$$0.00961 \text{ mol } Al(OH)_3 \cdot \frac{3 \text{ mol } H_2O}{1 \text{ mol } Al(OH)_3} = 0.0288 \text{ mol } H_2O$$

19b. $$0.0288 \text{ mol } H_2O \cdot \frac{18.02 \text{ g}}{\text{mol}} = 0.5198 \text{ g } H_2O$$

After the 7-19b solution, write: Rounding this result to 2 sig digs gives 0.52 g H_2O.