

## Ex1C151WKSHTS2011

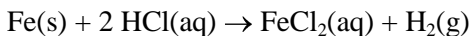
### Multiple Choice

Identify the letter of the choice that best completes the statement or answers the question.

- \_\_\_\_\_ 1. The density of acetic acid is 1.05 g/mL. What is the volume of 275 g of acetic acid?
- $3.46 \times 10^{-3}$  mL
  - $3.82 \times 10^{-3}$  mL
  - $2.62 \times 10^2$  mL
  - $2.76 \times 10^2$  mL
  - $2.89 \times 10^2$  mL
- \_\_\_\_\_ 2. When 12 copper pennies are submerged in water, the pennies displace  $4.13 \text{ cm}^3$  of water. If the combined mass of the pennies is 36.93 g, what is the density of copper?
- $0.745 \text{ g/cm}^3$
  - $3.49 \text{ g/cm}^3$
  - $8.94 \text{ g/cm}^3$
  - $32.8 \text{ g/cm}^3$
  - $153 \text{ g/cm}^3$
- \_\_\_\_\_ 3. A common wavelength of light emitted from a red laser pointer is  $6.50 \times 10^2$  nm. What is the wavelength in meters?
- $6.50 \times 10^{-9}$  m
  - $6.50 \times 10^{-7}$  m
  - $6.50 \times 10^{-5}$  m
  - $6.50 \times 10^{-3}$  m
  - $6.50 \times 10^0$  m
- \_\_\_\_\_ 4. If the fuel efficiency of an automobile is 22 miles per gallon, what is its fuel efficiency in kilometers per liter? (1 km = 0.621 mile, 1.000 L = 1.057 quarts, 4 quarts = 1 gallon)
- 3.2 km/L
  - 3.6 km/L
  - 9.4 km/L
  - 32 km/L
  - 52 km/L
- \_\_\_\_\_ 5. What is the correct answer to the following expression:  $(49.1 - 42.61) \times 13.1$ ?
- $9 \times 10^2$
  - 85
  - 85.0
  - 85.02
  - 85.019
- \_\_\_\_\_ 6. What is the correct answer to the following expression:  $3.33 \times 10^{-5} + 8.13 \times 10^{-7}$ ?
- $3 \times 10^{-5}$
  - $3.4 \times 10^{-5}$
  - $3.41 \times 10^{-5}$
  - $3.411 \times 10^{-5}$
  - $3.4113 \times 10^{-5}$

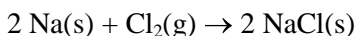
- \_\_\_\_\_ 7. Which of the following atoms contains the largest number of protons?
- $^{128}\text{Te}$
  - $^{121}\text{Sb}$
  - $^{127}\text{I}$
  - $^{107}\text{Ag}$
  - $^{112}\text{Cd}$
- \_\_\_\_\_ 8. Which two of the atoms below have the same number of neutrons?
- $^{28}_{14}\text{Si}$ ,  $^{28}_{12}\text{Mg}$ ,  $^{28}_{11}\text{Na}$ ,  $^{26}_{12}\text{Mg}$ ?
- $^{28}_{12}\text{Mg}$  and  $^{28}_{11}\text{Na}$
  - $^{26}_{12}\text{Mg}$  and  $^{28}_{12}\text{Mg}$
  - $^{28}_{14}\text{Si}$  and  $^{28}_{12}\text{Mg}$
  - $^{28}_{14}\text{Si}$  and  $^{28}_{11}\text{Na}$
  - $^{28}_{14}\text{Si}$  and  $^{26}_{12}\text{Mg}$
- \_\_\_\_\_ 9. How many electrons are in  $^{48}_{22}\text{Ti}^{4+}$ ?
- 18
  - 22
  - 26
  - 44
  - 52
- \_\_\_\_\_ 10. A 0.63 g sample of nickel contains \_\_\_\_\_ atoms.
- $1.1 \times 10^{-2}$
  - $6.5 \times 10^{21}$
  - $3.8 \times 10^{23}$
  - $2.2 \times 10^{25}$
  - $5.6 \times 10^{25}$
- \_\_\_\_\_ 11. What is the molar mass of cobalt(II) chloride hexahydrate?
- 94.39 g/mol
  - 202.5 g/mol
  - 237.9 g/mol
  - 135.9 g/mol
  - 129.8 g/mol
- \_\_\_\_\_ 12. A molecule is found to contain 47.35% C, 10.60% H, and 42.05% O. What is the empirical formula for this molecule?
- $\text{C}_2\text{H}_6\text{O}$
  - $\text{C}_2\text{H}_6\text{O}_2$
  - $\text{C}_3\text{H}_8\text{O}_2$
  - $\text{C}_3\text{H}_6\text{O}_3$
  - $\text{C}_4\text{H}_6\text{O}$

- \_\_\_ 13. Iron reacts with hydrochloric acid to produce iron (II) chloride and hydrogen gas.

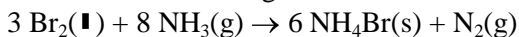


How many moles of HCl will react with 3.5 moles of Fe?

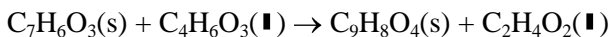
- a. 1.0 mol
  - b. 1.8 mol
  - c. 2.0 mol
  - d. 7.0 mol
  - e. 8.5
- \_\_\_ 14. How many moles of sodium chloride can be produced from the reaction of 3.35 moles of sodium with 2.13 moles of chlorine gas?



- a. 1.68 mol
  - b. 2.13 mol
  - c. 3.35 mol
  - d. 4.26 mol
  - e. 5.48 mol
- \_\_\_ 15. If 0.205 moles of bromine and 0.600 moles of ammonia react according to the equation below, what is the maximum number of grams of ammonium bromide that can be produced?



- a. 20.1 g
  - b. 40.2 g
  - c. 44.1 g
  - d. 58.8 g
  - e. 121 g
- \_\_\_ 16. Aspirin is produced by the reaction of salicylic acid ( $M = 138.1 \text{ g/mol}$ ) and acetic anhydride ( $M = 102.1 \text{ g/mol}$ ).



If 1.02 g of  $\text{C}_9\text{H}_8\text{O}_4$  ( $M = 180.2 \text{ g/mol}$ ) is produced from the reaction of 3.00 g  $\text{C}_7\text{H}_6\text{O}_3$  and 5.40 g  $\text{C}_4\text{H}_6\text{O}_3$ , what is the percent yield?

- a. 7.11%
- b. 11.6%
- c. 15.9%
- d. 26.1%
- e. 43.1%

## Answer Section

1.	ANS: C	6.	ANS: C	11.	ANS: C
2.	ANS: C	7.	ANS: C	12.	ANS: C
3.	ANS: B	8.	ANS: E	13.	ANS: D
4.	ANS: C	9.	ANS: A	14.	ANS: C
5.	ANS: B	10.	ANS: B	15.	ANS: B
				16.	ANS: D