

Study Guide –Chapter 7

CHM1033. Summer 2020

Test # 2: Jul. 1st (Chapters: 6, 7 and 9)

- Calculate the number of **Li** atoms in 6.0 moles of **Li**.
 - Calculate the number of **CO₂** molecules in 5.50×10^{-2} mole of **CO₂**.
 - Calculate the moles of **Cu** in 5.5×10^{21} atoms of **Cu**.
 - Calculate the moles of **C₂H₆** in 5.50×10^{23} molecules of **C₂H₆**.
- Calculate the moles of **C** in 0.186 mole of **C₆H₁₄O**.
 - Calculate the moles of **O** in 0.186 mole of **C₆H₁₄O**.
 - Calculate the number of **H** atoms in 0.186 mole of **C₆H₁₄O**.

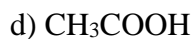
- d) Calculate the number of **C** atoms in 0.186 mole of **C₆H₁₄O**
3. Calculate the molar mass of each of the following:
- a) O₂

 - b) NaH₂PO₄

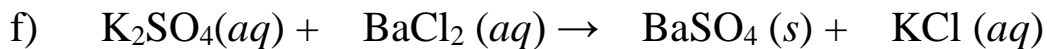
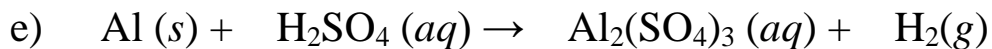
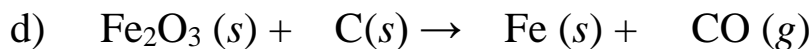
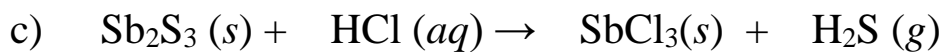
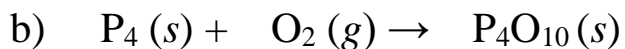
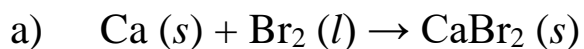
 - c) Fe(ClO₄)₂
4. Calculate the number of moles in 25.0 g of each of the following:
- a) NaOH

 - b) O₂

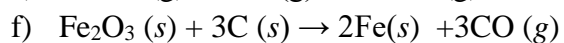
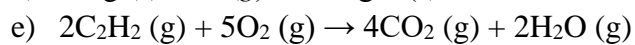
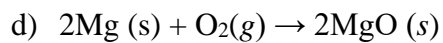
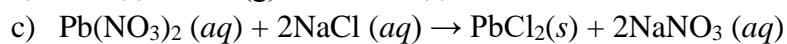
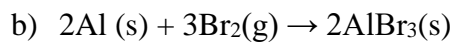
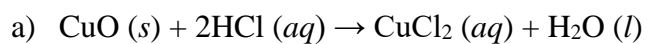
 - c) Al(OH)₃



5. Balance the following equations:



6. Classify each of the following reactions as a combination, decomposition, single replacement, double replacement, or combustion.



ANSWERS

- a)** 3.6×10^{24} atoms of Li **b)** 3.31×10^{22} molecules of CO_2 **c)** 9.1×10^{-3} moles of Cu **d)** 0.914 moles of **C₂H₆**
- a)** 1.12 moles **b)** 0.186 moles **c)** 1.57×10^{24} atoms **d)** 6.72×10^{23} atoms
- a)** 32.00 g/mol **b)** 120.0 g/mol **c)** 254.8 g/mol
- a)** 0.625 mol **b)** 0.781 mol **c)** 0.321 mol **d)** 0.416 mol
- a)** $\text{Ca} (s) + \text{Br}_2 (l) \rightarrow \text{CaBr}_2 (s)$ **b)** $\text{P}_4 (s) + 5 \text{O}_2 (g) \rightarrow \text{P}_4\text{O}_{10} (s)$
c) $\text{Sb}_2\text{S}_3 (s) + 6 \text{HCl} (aq) \rightarrow 2 \text{SbCl}_3 (s) + 3 \text{H}_2\text{S} (g)$
d) $\text{Fe}_2\text{O}_3 (s) + 3 \text{C} (s) \rightarrow 2 \text{Fe} (s) + 3 \text{CO} (g)$
e) $2 \text{Al} (s) + 3 \text{H}_2\text{SO}_4 (aq) \rightarrow \text{Al}_2(\text{SO}_4)_3 (aq) + 3 \text{H}_2 (g)$
f) $\text{K}_2\text{SO}_4 (aq) + \text{BaCl}_2 (aq) \rightarrow \text{BaSO}_4 (s) + 2 \text{KCl} (aq)$
- a)** double replacement **b)** combination **c)** double replacement **d)** combination
a) combustion **f)** single replacement