

Chemistry 212-213
Review
Stoichiometry

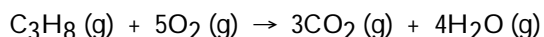
MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

- 1) How many grams of hydrogen are in 46 g of CH₄O? 1) _____
A) 2.8 B) 184 C) 0.36 D) 1.5 E) 5.8

- 2) How many moles of carbon dioxide are there in 52.06 g of carbon dioxide? 2) _____
A) 8.648×10^{23}
B) 0.8452
C) 3.134×10^{25}
D) 1.183
E) 6.022×10^{23}

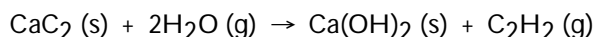
- 3) There are _____ molecules of methane in 0.123 mol of methane (CH₄). 3) _____
A) 2.46×10^{-2}
B) 7.40×10^{22}
C) 5
D) 0.615
E) 2.04×10^{-25}

- 4) The combustion of propane (C₃H₈) in the presence of excess oxygen yields CO₂ and H₂O: 4) _____



When 2.5 mol of O₂ are consumed in their reaction, _____ mol of CO₂ are produced.

- A) 1.5 B) 2.5 C) 5.0 D) 6.0 E) 3.0
- 5) Calcium carbide (CaC₂) reacts with water to produce acetylene (C₂H₂): 5) _____



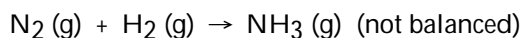
Production of 13 g of C₂H₂ requires consumption of _____ g of H₂O.

- A) 9.0 B) 18 C) 4.8×10^2 D) 4.5 E) 4.8×10^{-2}
- 6) What mass in grams of hydrogen is produced by the reaction of 4.73 g of magnesium with 1.83 g of water? 6) _____



- A) 0.204 B) 0.0485 C) 0.0162 D) 0.219 E) 0.102

- 7) What is the maximum mass in grams of NH_3 that can be produced by the reaction of 1.0 g of N_2 with 3.0 g of H_2 via the equation below? 7) _____



- A) 1.2 B) 2.0 C) 0.61 D) 4.0 E) 17
- 8) A sulfur oxide is 50.0% by mass sulfur. This molecular formula could be _____. 8) _____
- A) S_2O
B) SO_2
C) SO
D) S_2O_4
E) either SO_2 or S_2O_4

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

- 9) A compound was found to contain 90.6% lead (Pb) and 9.4% oxygen. The empirical formula for this compound is _____. 9) _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

- 10) How many grams of CH_3OH must be added to water to prepare 150 mL of a solution that is 2.0 M CH_3OH ? 10) _____
- A) 9.6 B) 4.3 C) 9.6×10^3 D) 2.4 E) 4.3×10^2
- 11) The concentration (M) of an aqueous methanol produced when 0.200 L of a 2.00 M solution was diluted to 0.800 L is _____. 11) _____
- A) 0.500 B) 0.400 C) 8.00 D) 0.200 E) 0.800