Unit 4 Chemical reactions MCQ set 2

Unit 4 - Chemical Reactions
Multiple Choice VI **Name:**_____

CALCULATORS CANNOT BE USED IN THIS SECTION

1. How many moles of Cu are produced when 0.25 moles of Cu_2Se are completely reduced by an excess of hydrogen gas?
   (A) 0.13 mol
   (B) 0.25 mol
   (C) 0.50 mol
   (D) 0.75 mol

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2. Which of the statements below is correct in regards to the following process?
   $PbO_2 + 4\ Cl^- + 4\ H^+ \rightarrow PbCl_2 + 2\ H_2O + Cl_2$
   (A) The oxidation number of Pb changes from – 4 to – 2. .
   (B) Oxygen is reduced in the reaction.
   (C) The oxidation number of Pb changes from + 4 to +2.
   (D) The oxidation number of Cl changes from -1 to +1.

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3. Which of the following reactions does not produce a gas?
   (A) $K + H_2O \rightarrow$
   (B) $Cs + H_2O \rightarrow$
   (C) $MnO_4^- + Fe^{2+} \rightarrow$
   (D) $Na + H_2O \rightarrow$

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4. Which of the following statements in **incorrect**.
   (A) Chlorine gas can react with the bromide ion to produce liquid bromine.
   (B) Chlorine is more electronegative than iodine.
   (C) The first ionization energy of chlorine is greater than the first ionization energy of iodine.
   (D) Chlorine gas is more easily reduced than fluorine gas.

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5. Which species is oxidized in the following process?
   $2\ MnO_4^- + 3\ SO_3^{2-} + H_2O \rightarrow 2\ MnO_2 + 3\ SO_4^{2-} + 2\ OH^-$
   (A) MnO_4^-
   (B) SO_3^{2-}
   (C) H_2O
   (D) SO_4^{2-}

6. A 56.12 g pure sample of C_4H_8 (MM = 56.12 g/mol) is burned in the presence of excess oxygen gas. What is the maximum mass of CO_2 that could be produced?
   (A) 44.01 g CO_2
   (B) 56.12 g CO_2
   (C) 112.0 g CO_2
   (D) 176.0 g CO_2

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7. What is the oxidation number on nitrogen in NF_3?
   (A) +3
   (B) +9
   (C) −3
   (D) −6

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8. A 1.0 L aqueous solution contains 0.30 mol of KBr and 0.60 mol of NaBr. What is the minimum number of moles of $Pb(NO_3)_2$ that must be added to precipitate all of the bromide ions?
   (A) 0.60 mol
   (B) 0.30 mol
   (C) 0.15 mol
   (D) 0.45 mol

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9. A black precipitate forms when a solution of 1.0 M Na_2S is mixed with which of the following solutions.
   (A) 1.0 M KNO_3
   (B) 1.0 M $Pb(NO_3)_2$
   (C) 1.0 M $NaNO_3$
   (D) 1.0 M KI

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10. Which of the following metals does not react with hydrochloric acid to produce hydrogen gas?
    (A) Copper
    (B) Sodium
    (C) Zinc
    (D) Magnesium

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