ADDITION TO THE COMMON PORTION OF CHEMISTRY COMP 7TH GRADE PRACTICE TEST #1:

39. What is the limiting reagent in the reaction diagram below?

![Reaction Diagram]

a. O₂  

b. CH₄  

c. H₂  

d. H₂O

40. Calculate the molarity of a 3.5 L solution containing 66.8 g of lithium nitrate.

a. 0.969 M  

c. 19.1 M  

b. 0.277 M  

d. 3.6 M

41. What type of reaction is \( 8 \text{Fe} + \text{S}_8 \rightarrow 8 \text{FeS} \)?

a. synthesis  

c. precipitation  

b. decomposition  

d. neutralization

42. What type of reaction is \( \text{HBr (aq)} + \text{NaOH (aq)} \rightarrow \text{NaBr (aq)} + \text{H}_2\text{O (l)} \)?

a. synthesis  

c. precipitation  

b. decomposition  

d. neutralization

43. What type of reaction is \( \text{C}_{10}\text{H}_8 + 12 \text{O}_2 \rightarrow 10 \text{CO}_2 + 4 \text{H}_2\text{O} \)?

a. synthesis  

c. precipitation  

b. decomposition  

d. combustion

44. In a reaction mixing solutions of lithium sulfate and iron (II) chloride, what will the precipitate be (if any)?

a. lithium chloride (s)  

c. iron (II) lithium (s)  

b. iron (II) sulfate (s)  

d. there is no precipitate

45. In a reaction mixing solutions of calcium nitrate and magnesium perchlorate, what will the precipitate be (if any)?

a. CaClO₃ (s)  

c. MgNO₃ (s)  

b. Ca(ClO₄)₂ (s)  

d. Mg(NO₃)₂ (s)

46. Soluble salts ___ in water.

a. dissociate  

c. dissolve and form homogeneous solutions  

b. break apart into cations and anions  

d. all of the above

47. What is the correct net ionic equation for the molecular equation below:

\[ 2\text{NaOH} + \text{MgCl}_2 \rightarrow \text{Mg(OH)}_2 + 2\text{NaCl} \]

a. \( 2\text{Na}^+(aq) + 2\text{OH}^- (aq) + \text{Mg}^{2+} (aq) + 2\text{Cl}^- (aq) \rightarrow \text{Mg(OH)}_2 (s) + 2\text{Na}^+(aq) + 2\text{Cl}^- (aq) \)

b. \( 2\text{Na}^+(aq) + 2\text{OH}^- (aq) + \text{Mg}^{2+} (aq) + \text{Cl}^- (aq) \rightarrow \text{Mg(OH)}_2 (s) + 2\text{Na}^+(aq) + \text{Cl}^- (aq) \)

c. \( 2\text{OH}^- (aq) + \text{Mg}^{2+} (aq) \rightarrow \text{Mg(OH)}_2 (s) \)

d. \( 2\text{Na}^+(aq) + 2\text{Cl}^- (aq) \rightarrow 2\text{Na}^+(aq) + 2\text{Cl}^- (aq) \)
ANSWER KEY:

39. What is the limiting reagent in the reaction diagram below?

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b. CH₄
c. H₂
d. H₂O

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42. What type of reaction is HBr (aq) + NaOH (aq) → NaBr (aq) + H₂O (l)

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43. What type of reaction is C₁₀H₈ + 12 O₂ → 10 CO₂ + 4 H₂O

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d. Mg(NO₃)₂ (s)

46. Soluble salts ___ in water.

a. dissociate
c. dissolve and form homogeneous solutions
b. break apart into cations and anions
d. all of the above

47. What is the correct net ionic equation for the molecular equation below:

2NaOH + MgCl₂ → Mg(OH)₂ + 2 NaCl

e. 2Na⁺ (aq) + 2OH⁻ (aq) + Mg²⁺ (aq) + 2Cl⁻ (aq) → Mg(OH)₂ (s) + 2Na⁺(aq) + 2Cl⁻ (aq)
f. 2Na⁺ (aq) + 2OH⁻ (aq) + Mg²⁺ (aq) + Cl²⁻ (aq) → Mg(OH)₂ (s) + 2Na⁺(aq) + Cl²⁻ (aq)
g. 2OH⁻ (aq) + Mg²⁺ (aq) → Mg(OH)₂ (s)
h. 2Na⁺ (aq) + 2Cl⁻ (aq) → 2Na⁺(aq) + 2Cl⁻ (aq)