

## AP Chemistry Multiple Choice Questions - Chapter 3

1 Which of the following reactions represents a decomposition reaction?

- a  $P_4O_{10} + 6H_2O \rightarrow 4H_3PO_4$                       b  $2NaN_3 \rightarrow 2Na + 3N_2$   
 c  $2H_2O + O_2 \rightarrow 2H_2O_2$                       d  $HCl + NaOH \rightarrow NaCl + H_2O$

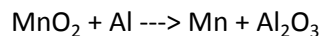
	<b>3.2</b>
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2 Which of the following chemical equations is *not* balanced?

- a  $CaF_2 + H_2SO_4 \rightarrow 2HF + CaSO_4$                       b  $Ca_3(PO_4)_2 + 4H_3PO_4 \rightarrow 3Ca(H_2PO_4)_2$   
 c  $NaNO_3 + H_2SO_4 \rightarrow Na_2SO_4 + 2HNO_3$                       d  $P_4O_6 + 6H_2O \rightarrow 4H_3PO_3$

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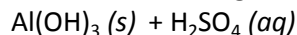
3 What is the coefficient in front of  $MnO_2$  when the following equation is balanced?



- a            1    b            2  
 c            3    d            4

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5 When the following is completed and balanced, the products of the reaction below are



- a  $AlSO_4 (aq) + 6H_2O (l)$                       b  $Al_2(SO_4)_3 (aq) + 6H_2O (l)$   
 c  $AlSO_4 (s) + H_2O (l)$                       d  $Al_2(SO_4)_3 (aq) + H_2O (l)$

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11 When a strong acid reacts with an active metal, which of the following is formed?

- a  $H_2 (g)$     b  $H_2O (l)$   
 c An element of the acid                      d Another acid

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13 Copper does not react with hydrochloric acid whereas manganese does. This means that

- a Copper is more active than hydrogen                      b Manganese is less active than hydrogen  
 c Chloride ion will react with copper                      d Manganese is higher in the activity series than copper

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14 Which of the following metals cannot displace hydrogen from water (steam or liquid)?

- a Mg    b Ba  
 c Li    d Ag

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15 Use the activity series to predict which of the following reactions will occur.

- a  $Cu (s) + 2AgNO_3 (aq) \rightarrow Cu(NO_3)_2 (aq) + 2Ag (s)$                       b  $3Fe (s) + Al_2(SO_4)_3 (aq) \rightarrow 2Al (s) + 3FeSO_4 (aq)$   
 c  $H_2 (g) + LiOH (aq) \rightarrow 2Li (s) + 2H_2O (l)$                       d  $Cu (s) + ZnSO_4 (aq) \rightarrow Zn (s) + CuSO_4 (aq)$

	<b>3.2</b>
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