1. $\mathrm{Mg}(\mathrm{s})+2 \mathrm{HCl}(\mathrm{aq}) \leftrightarrow \mathrm{MgCl}_{2}(\mathrm{aq})+\mathrm{H}_{2}(\mathrm{~g})$

What type of reaction is shown above?
A) synthesis
B) decomposition
C) single replacement
D) double replacement
2. $\quad \mathrm{Ba}\left(\mathrm{NO}_{3}\right)_{2}(\mathrm{aq})+\mathrm{Na}_{2} \mathrm{SO}_{4}(\mathrm{aq}) \rightarrow$ $2 \mathrm{NaNO}_{3}(\mathrm{aq})+\mathrm{BaSO}_{4}(\mathrm{~s})$

What type of reaction is shown above?
A) synthesis
B) decomposition
C) single replacement
D) double replacement
3. $\mathrm{N}_{2}(\mathrm{~g})+3 \mathrm{H}_{2}(\mathrm{~g}) \leftrightarrow 2 \mathrm{NH}_{3}(\mathrm{~g})$

What type of reaction is shown above?
A) synthesis
B) decomposition
C) single replacement
D) double replacement
4. $2 \mathrm{CO}(\mathrm{g})+\mathrm{O}_{2}(\mathrm{~g}) \leftrightarrow 2 \mathrm{CO}_{2}(\mathrm{~g})$

What type of reaction is shown above?
A) synthesis
B) decomposition
C) single replacement
D) double replacement
5. $2 \mathrm{SO}_{3}(\mathrm{~g}) \leftrightarrow 2 \mathrm{SO}_{2}(\mathrm{~g})+\mathrm{O}_{2}(\mathrm{~g}$

What type of reaction is shown above?
A) synthesis
B) decomposition
C) single replacement
D) double replacement
6. $\mathrm{H}_{2}(\mathrm{~g})+\mathrm{I}_{2}(\mathrm{~g}) \leftrightarrow 2 \mathrm{HI}(\mathrm{g})$

What type of reaction is shown above?
A) synthesis
B) decomposition
C) single replacement
D) double replacement
7. $2 \mathrm{NH}_{3}(\mathrm{~g}) \leftrightarrow \mathrm{N}_{2}(\mathrm{~g})+3 \mathrm{H}_{2}(\mathrm{~g})$

What type of reaction is shown above?
A) synthesis
B) decomposition
C) single replacement
D) double replacement
8. $\mathrm{Cu}(\mathrm{s})+2 \mathrm{HCl}(\mathrm{aq}) \leftrightarrow \mathrm{CuCl}_{2}(\mathrm{aq})+\mathrm{H}_{2}(\mathrm{~g})$

What type of reaction is shown above?
A) synthesis
B) decomposition
C) single replacement
D) double replacement
9. In which type of reaction do two or more substances combine to produce a single substance?
A) synthesis
B) decomposition
C) single replacement
D) double replacement
10. $2 \mathrm{SO}_{2}(\mathrm{~g})+\mathrm{O}_{2}(\mathrm{~g}) \leftrightarrow 2 \mathrm{SO}_{3}(\mathrm{~g})$

What type of reaction is shown above?
A) synthesis
B) decomposition
C) single replacement
D) double replacement
11. $\quad \mathrm{F}_{2}(\mathrm{~g})+\mathrm{CaBr}_{2}(\mathrm{~g})=\mathrm{CaF}_{2}(\mathrm{~g})+\mathrm{Br}_{2}(\mathrm{~g})$

What type of reaction is shown above?
A) synthesis
B) decomposition
C) single replacement
D) double replacement
12. $2 \mathrm{CO}(\mathrm{g})+\mathrm{O}_{2}(\mathrm{~g}) \leftrightarrow 2 \mathrm{CO}_{2}(\mathrm{~g})$

What type of reaction is shown above?
A) synthesis
B) decomposition
C) single replacement
D) double replacement
13. Which list includes three types of chemical reactions?
A) decomposition, single replacement, and solidification
B) decomposition, single replacement, and double replacement
C) solidification, double replacement, and decomposition
D) solidification, double replacement, and single replacement
14. Which equation represents a single replacement reaction?
A) $2 \mathrm{H}_{2} \mathrm{O}_{2} \rightarrow 2 \mathrm{H}_{2} \mathrm{O}+\mathrm{O}_{2}$
B) $2 \mathrm{H}_{2}+\mathrm{O}_{2} \rightarrow 2 \mathrm{H}_{2} \mathrm{O}$
C) $\mathrm{H}_{2} \mathrm{SO}_{4}+\mathrm{Mg} \rightarrow \mathrm{H}_{2}+\mathrm{MgSO}_{4}$
D) $\mathrm{HCl}+\mathrm{KOH} \rightarrow \mathrm{KCl}+\mathrm{H}_{2} \mathrm{O}$
15. Which change results in the formation of different substances?
A) burning of propane
B) melting of $\mathrm{NaCl}(\mathrm{s})$
C) deposition of $\mathrm{CO}_{2}(\mathrm{~g})$
D) solidification of water
16. Which terms identify types of chemical reactions?
A) decomposition and sublimation
B) decomposition and synthesis
C) deposition and sublimation
D) deposition and synthesis
17. Given the word equation:
sodium chlorate $\rightarrow$ sodium chloride + oxygen
Which type of chemical reaction is represented by this equation?
A) double replacement
B) single replacement
C) decomposition
D) synthesis
18. In which type of chemical reaction do two or more reactants combine to form one product, only?
A) synthesis
B) decomposition
C) single replacement
D) double replacement
19. Given the balanced equations representing two chemical reactions:

$$
\begin{gathered}
\mathrm{Cl}_{2}+2 \mathrm{NaBr} \rightarrow 2 \mathrm{NaCl}+\mathrm{Br}_{2} \\
2 \mathrm{NaCl} \rightarrow 2 \mathrm{Na}+\mathrm{Cl}_{2}
\end{gathered}
$$

Which type of chemical reactions are represented by these equations?
A) single replacement and decomposition
B) single replacement and double replacement
C) synthesis and decomposition
D) synthesis and double replacement
20. Given the balanced equation representing a reaction:
$\mathrm{Zn}(\mathrm{s})+\mathrm{H}_{2} \mathrm{SO}_{4}(\mathrm{aq}) \rightarrow \mathrm{ZnSO}_{4}(\mathrm{aq})+\mathrm{H}_{2}(\mathrm{~g})$
Which type of reaction is represented by this equation?
A) decomposition
B) double replacement
C) single replacement
D) synthesis
21. Which balanced equation represents a single-replacement reaction?
A) $\mathrm{Mg}+2 \mathrm{AgNO}_{3} \rightarrow \mathrm{Mg}\left(\mathrm{NO}_{3}\right)_{2}+2 \mathrm{Ag}$
B) $2 \mathrm{Mg}+\mathrm{O}_{2} \rightarrow 2 \mathrm{MgO}$
C) $\mathrm{MgCO}_{3} \rightarrow \mathrm{MgO}+\mathrm{CO}_{2}$
D) $\mathrm{MgCl}_{2}+2 \mathrm{AgNO}_{3} \rightarrow 2 \mathrm{AgCl}+\mathrm{Mg}\left(\mathrm{NO}_{3}\right)_{2}$
22. Which equation represents a decomposition reaction?
A) $\mathrm{CaCO}_{3}(\mathrm{~s}) \rightarrow \mathrm{CaO}(\mathrm{s})+\mathrm{CO}_{2}(\mathrm{~g})$
B) $\mathrm{Cu}(\mathrm{s})+2 \mathrm{AgNO}_{3}(\mathrm{aq}) \rightarrow$

$$
2 \mathrm{Ag}(\mathrm{~s})+\mathrm{Cu}\left(\mathrm{NO}_{3}\right)_{2}(\mathrm{aq})
$$

C) $2 \mathrm{H}_{2}(\mathrm{~g})+\mathrm{O}_{2}(\mathrm{~g}) \rightarrow 2 \mathrm{H}_{2} \mathrm{O}(l)$
D) $\mathrm{KOH}(\mathrm{aq})+\mathrm{HCl}(\mathrm{aq}) \rightarrow \mathrm{KCl}(\mathrm{aq})+\mathrm{H}_{2} \mathrm{O}(l)$
23. Given the balanced equation representing a reaction:
$4 \mathrm{Al}(\mathrm{s})+3 \mathrm{O}_{2}(\mathrm{~g}) \rightarrow 2 \mathrm{Al}_{2} \mathrm{O}_{3}(\mathrm{~s})$
Which type of chemical reaction is represented by this equation?
A) double replacement
B) single replacement
C) substitution
D) synthesis
24. Given the balanced equation:
$2 \mathrm{KClO}_{3} \rightarrow 2 \mathrm{KCl}+3 \mathrm{O}_{2}$
Which type of reaction is represented by this equation?
A) synthesis
B) decomposition
C) single replacement
D) double replacement
25. Given the balanced equation:
$\mathrm{AgNO}_{3}(\mathrm{aq})+\mathrm{NaCl}(\mathrm{aq}) \rightarrow \mathrm{NaNO}_{3}(\mathrm{aq})+\mathrm{AgCl}(\mathrm{s})$
This reaction is classified as
A) synthesis
B) decomposition
C) single replacement
D) double replacement
26. Given the reaction:

$$
\underset{\operatorname{Ag}(\mathrm{s})}{\mathrm{Mg}(\mathrm{~s})}+2 \mathrm{AgNO}_{3}(\mathrm{aq}) \rightarrow \mathrm{Mg}\left(\mathrm{NO}_{3}\right)_{2}(\mathrm{aq})+2
$$

Which type of reaction is represented?
A) single replacement
B) double replacement
C) synthesis
D) decomposition
27. Which term identifies a type of chemical reaction?
A) decomposition
B) distillation
C) sublimation
D) vaporization
28. Given the balanced equation representing a reaction:
$6 \mathrm{Li}+\mathrm{N}_{2} \rightarrow 2 \mathrm{Li}_{3} \mathrm{~N}$
Which type of chemical reaction is represented by this equation?
A) synthesis
B) decomposition
C) single replacement
D) double replacement

