

For each of the following reactions:

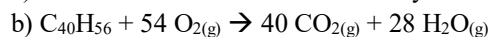
A) Identify the TYPE of reaction and briefly state *why*

B) Complete (if needed) and balance the reaction (states of matter are not required but would be good practice)

Example:

1) β -carotene ($C_{40}H_{56}$) is the chemical that gives carrots their orange color. It is also the reason that carrots are said to be good for your eyesight. Write a balanced chemical equation for the combustion of β -carotene.

a) **combustion reaction** because it says combustion in the question



- 2) sodium chromate is added to bismuth (V) nitrite
- 3) solid cobalt metal is reacted with oxygen gas to form cobalt (III) oxide
- 4) Tetrahydrocannabinol (THC) is the active chemical in marijuana and has a chemical formula of $C_{21}H_{30}O_2$. Write a balanced chemical equation for the combustion of tetrahydrocannabinol.
- 5) hydrosulfuric acid is added to potassium hydroxide
- 6) copper (II) carbonate is decomposed by heating
- 7) Candle wax has the chemical formula $C_{30}H_{62}$. Write a balanced chemical equation for the combustion of candle wax.
- 8) water is poured onto magnesium metal
- 9) calcium metal is reacted with P_4
- 10) magnesium metal is dropped into acetic acid
- 11) benzoic acid – $C_6H_5CO_2H$ – is burned
- 12) sulfuric acid is poured onto solid copper
- 13) an aqueous solution of lithium phosphate is added to an aqueous solution of strontium chloride
- 14) what is the balanced chemical reaction for the combustion of octanol – $C_8H_{17}OH$
- 15) solid potassium carbonate is heated over a Bunsen burner
- 16) iodine is reacted with aluminum
- 17) sulfuric acid is used to neutralize an aqueous solution of aluminum hydroxide
- 18) lithium is dropped into water
- 19) aqueous solutions of copper (II) carbonate and tin (IV) bromite are poured together
- 20) acetic acid and a lithium hydroxide solution are reacted
- 21) tin (IV) hydrogen carbonate is decomposed upon heating
- 22) zinc metal is dropped into hydrochloric acid
- 23) write the balanced chemical equation for the reaction that takes place when barium bicarbonate is heated
- 24) nonane – C_9H_{20} – is burned, write the balanced equation
- 25) cesium is combined with hydrogen gas
- 26) ammonium sulfide and chromium (III) perchlorate react
- 27) an iron (II) nitrate solution is poured over solid zinc
- 28) carbonic acid and sodium hydroxide neutralize each other
- 29) solid manganese and aqueous aluminum nitrate are placed in a beaker
- 30) barium metal is placed in water
- 31) chromium metal reacts with S_8 to form chromium (III) sulfide
- 32) nickel (III) carbonate is decomposed
- 33) aqueous lead (II) chlorate is added to solid strontium
- 34) aqueous barium hydroxide and phosphoric acid are reacted
- 35) heat is added to chromium (III) bicarbonate
- 36) hydrochloric acid is poured over antimony (III) sulfide
- 37) the PRODUCTS of a neutralization are water and magnesium nitrate
- 38) sodium metal is reacted with selenium
- 39) aqueous iron (II) bromite and cadmium are added to each other
- 40) lead (II) acetate and iron (III) hypoiodite react