

Reaction Types Questions

1. Consider the five types of reactions we've studied. They all involve elements and compounds as reactants. Which type of reaction is described by each of the following?

- a) Two reactants that are compounds.
- b) One reactant is an element and one is a compound.
- c) The reactants are a fuel and oxygen.
- d) Both reactants are elements.
- e) The single reactant is a compound.
- f) These two reaction types seem to be the opposite of one another.

2. Identify each of the following reactions as one of the types of reactions we studied:

- a) sodium iodide \rightarrow sodium + iodine
- b) zinc carbonate \rightarrow zinc oxide + carbon dioxide
- c) barium + sulfur \rightarrow barium sulfide
- d) bromine + sodium iodide \rightarrow iodine + sodium bromine
- e) Sodium bromide + calcium iodide \rightarrow sodium iodide + calcium bromide
- f) iron + oxygen \rightarrow iron(III) oxide
- g) calcium + water \rightarrow hydrogen + calcium hydroxide
- h) barium nitrate + sodium sulfide \rightarrow barium sulfide + sodium nitrate
- i) lithium carbonate \rightarrow carbon dioxide + lithium oxide
- j) lead(II) oxide \rightarrow lead + oxygen

3. Write a balanced skeleton equation for each of the reactions in question 2. (Gold group write balanced skeleton equations for a-e only.)

(P, D) 4. a) What is the meaning of the term "combustion"?

b) During a combustion reaction, if there is not enough oxygen present, a substance cannot burn completely. This is called incomplete combustion. One of the products is carbon monoxide - a deadly, odorless, tasteless, colorless gas. Knowing this, why should automobiles and gas barbecues never be operated in enclosed spaces like garages?

(D) 5. Polymers are long-chain molecules that are made up of many smaller repeating units called monomers. For example, polyethylene (used to make plastic bags, containers and bottles) is made up of hundreds of ethylene molecules linked together. What kind of reaction is polymerization? Use a word equation to explain it.