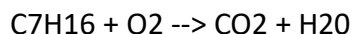


What type of reactions is:



Solution:

$\text{C}_7\text{H}_{16} + 11\text{O}_2 \rightarrow 7\text{CO}_2 + 8\text{H}_2\text{O}$ is a combustion reaction, where combustible material (C_7H_{16}) reacts with an oxygen and generate heat (exothermic reaction). Combustion reaction is a type of redox (Reduction-oxidation) reactions, where the oxidation numbers of atoms are changed. Redox reactions involve the transfer of electrons between chemical compounds. Formally, Carbon in C_7H_{16} has negative oxidation number and to form CO_2 with positive oxidation number. From the other side, O_2 has zero oxidation number and to form Oxygen atoms in compounds (so called oxides) with negative oxidation number. Then, electrons transfer from Carbon atoms to Oxygen atoms, and then it is redox reaction.

Answer: $\text{C}_7\text{H}_{16} + 11\text{O}_2 \rightarrow 7\text{CO}_2 + 8\text{H}_2\text{O}$ is a combustion reaction.

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