Balancing Equations

When balancing equations first balance those elements that form a single product.
In the case of hydrocarbons balance
Carbon atoms first
Hydrogen atoms second
Oxygen atoms third as oxygen forms 2 products water and CO2
When the number of oxygen atoms in the product side is an odd number put this number as the coefficient for oxygen and then double the coefficients of all the other compounds.

$$\left[C_2H_5OH + \frac{7}{2}O_2 \rightarrow 2CO_2 + 3H_2O \right] \times 2$$
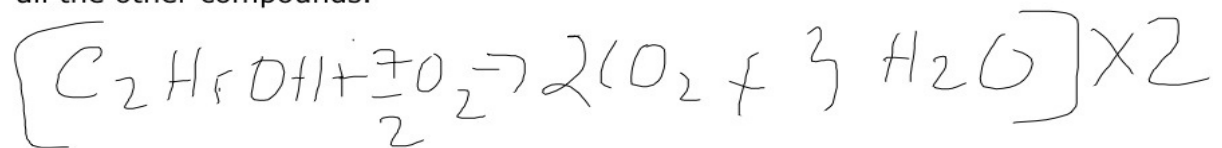
There are 7 oxygen atoms in the product side so the coefficient should be 7/2 now for diatomic oxygen, multiply coefficients of all reactants and products by 2. Now you should have a balanced equation

$$2C_2H_5OH + 7O_2 \rightarrow 4CO_2 + 6H_2O$$

$$C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O$$

$$C_2H_6 + \frac{7}{2}O_2 \rightarrow 2CO_2 + 3H_2O$$

$$2C_2H_6 + 7O_2 \rightarrow 4CO_2 + 6H_2$$