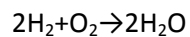15 cm^3 of hydrogen are sparked with 10 cm^3 of oxygen at atmospheric pressure. What is the total volume of the residual gas at room temperature.

Answer:
$2H_2+O_2 \rightarrow 2H_2O$
n = V/22.4   n = m/M

n (H_2) = 15/22.4 = 0.7 mmol
n (O_2) = 10/22.4 = 0.5 mmol
According to equation above, n (H_2) = 2 x n (O_2) or n (O_2) = n (H_2) / 2. Therefore, Hydrogen will react fully.
The remaining amount of O_2 will be:
n (O_2) = 0.5 – (0.7/2) = 0.15 mmol
V (O_2) = 0.15 x 22.4 = 3.36 cm^3

Answer provided by www.AssignmentExpert.com