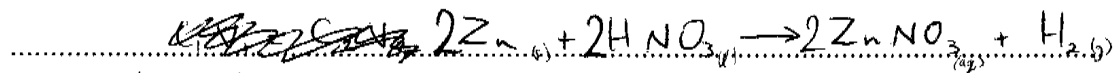


Question 26 (4 marks)

A gas is produced when 10.0 g of zinc is placed in 0.50 L of 0.20 mol L⁻¹ nitric acid. 4

Calculate the volume of gas produced at 25°C and 100 kPa. Include a balanced chemical equation in your answer.



~~10.0 g Zn~~

moles of zinc = $\frac{10}{65.41} \approx 0.153 \text{ mol L}^{-1}$

Since ~~2Zn~~ needed $0.153 \times 2 \approx 0.306 \text{ mol L}^{-1}$

~~2Zn~~ conc = zinc = $\frac{\text{moles}}{\text{volume}} = \frac{0.306}{24.79} = 0.0123$

$0.0123 \times \frac{0.50 \times 0.20}{0.2479} = \cancel{0.0036} 0.0036 \text{ L}$