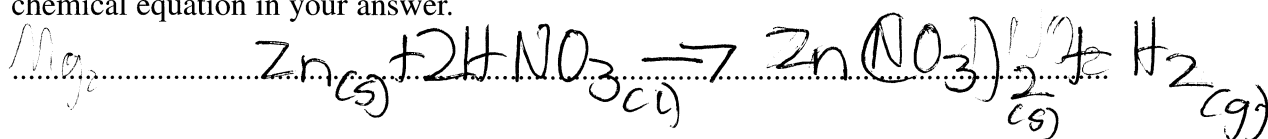


**Question 26** (4 marks)

A gas is produced when 10.0 g of zinc is placed in 0.50 L of 0.20 mol L<sup>-1</sup> nitric acid.

4

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



$$\frac{10}{65.41} = 0.1528 \text{ moles} \quad n = cV$$

$$= 0.5 \times 0.2$$

∴ For the Zn that is in excess = 0.1 moles

$$\frac{0.1}{2} = 0.05 \text{ moles}$$

$$0.05 \times 24.47 \text{ g}$$

$$= 1.24 \text{ L (3 sig fig)}$$