

APOLLO

Ideal gases

HL

Chemistry

First assessment 2025

6 questions | mark schemes

Mark-scheme answers

Chemistry HL | Paper 1A | May 2025 TZ1 | Q5 | 1 marks

5. A

Chemistry HL | Paper 1A | May 2025 TZ1 | Q17 | 1 marks

17. D

Chemistry HL | Paper 1A | Nov 2025 TZ1 | Q5 | 1 marks

5. C

Chemistry HL | Paper 1A | Nov 2025 TZ3 | Q5 | 1 marks

5. C

1.	(a)	Any one of: forms nitrous acid / HNO_2 / nitric acid / HNO_3 ✓ contributes to acid rain ✓ catalyses decomposition of ozone / contributes to ozone hole/depletion ✓ «respiratory» irritant/toxic ✓	Accept suitable equations showing acid rain formation or ozone depletion. Accept photochemical smog/forms NO_2 .	1 max
1.	(b)	$T = 200 + 273$ «K» ✓ « $n = PV/RT$ » « $n = \frac{(1.0 \times 10^5)(1.0 \times 10^{-3})}{8.31(200+273)}$ » « $n =$ » 0.025 «mol» ✓ «0.10% $\times$ 0.025 $\Rightarrow$ » 2.5×10^{-5} «mol» ✓	Award [3] for correct final answer.	3
1.	(c)	NO polar AND N_2 non-polar OR NO has dipole-dipole «and LDF» AND N_2 has London/dispersion «forces between molecules» ✓ stronger intermolecular forces in NO OR dipole-dipole «forces» are stronger «than LDF» ✓		2
1.	(d)	(i) Initial: +2 AND Final: 0 ✓	Accept II for initial oxidation state, but do not accept 2+ or 2.	1
1.	(d)	(ii) $2\text{NO}(\text{g}) + 2\text{CO}(\text{g}) \rightarrow 2\text{CO}_2(\text{g}) + \text{N}_2(\text{g})$ ✓		1

Question	Answers	Notes	Total
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Mark-scheme answers

Chemistry HL | Paper 1A | Specimen 2025 | Q5 | 1 marks

5. C