

APOLLO

Measuring enthalpy changes

HL

Chemistry

First assessment 2025

8 questions | mark schemes

Mark-scheme answers

Chemistry HL | Paper 1A | May 2025 TZ1 | Q22 | 1 marks

22. D

Chemistry HL | Paper 1A | May 2025 TZ1 | Q23 | 1 marks

23. C

Chemistry HL | Paper 1A | May 2025 TZ2 | Q18 | 1 marks

18. A

Chemistry HL | Paper 1A | May 2025 TZ3 | Q20 | 1 marks

20. D

Chemistry HL | Paper 1A | May 2025 TZ3 | Q21 | 1 marks

21. A

Chemistry HL | Paper 1A | Nov 2025 TZ1 | Q20 | 1 marks

20. A

2.	(a)		$\llcorner 26.77^{\circ}\text{C} - 25.00^{\circ}\text{C} = \gg 1.77^{\circ}\text{C/K} \gg \checkmark$ $\llcorner 5.65\text{ g} \times 4.18\text{ J g}^{-1}\text{K}^{-1} \times 1.77^{\circ}\text{C} = \gg 41.8\text{ J} \gg \checkmark$	Award [2] for correct final answer.	2
2.	(b)		$\llcorner 26.77^{\circ}\text{C} - 100.00^{\circ}\text{C} = \gg -73.23^{\circ}\text{C/K} \gg \checkmark$ $\llcorner -41.8\text{ J}/1.28\text{ g} \times -73.23^{\circ}\text{C} = \gg 0.446\text{ J g}^{-1}\text{K}^{-1} \gg \checkmark$	Award [2] for correct final answer. Award [2] if 40.5 J is used and answer is " $0.432\text{ J g}^{-1}\text{K}^{-1}$ ". Award [1] max for $-0.446\text{ J g}^{-1}\text{K}^{-1}$.	2

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8825 – 6208M

2.	(c)		iron $\checkmark$		1
2.	(d)		Any two of: loss of heat from metal during transfer $\checkmark$ loss of heat from/no insulation for beaker B/second calorimeter $\llcorner$ to surrounding $\gg \checkmark$ water evaporating from beaker B/second calorimeter during metal transfer $\checkmark$ not accounting for the heat absorbed by/heat capacity of beaker B/second calorimeter $\checkmark$	Accept "water mass very small". Accept "distilled/deionized/pure water not used". Do not penalize failing to identify beaker more than once. Do not accept "metal may have oxidized". Do not accept "water transferred with metal" as this would give opposite result. Do not accept "heat loss" alone.	2 max

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2.	(e)		density OR electrical/thermal conductivity OR hardness $\checkmark$	Accept "magnetic" properties. Accept "strength" for hardness. Ignore any other physical property.	1
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Question	Answers	Notes	Total
	saturate chamber/chromatogram with solvent vapor $\checkmark$	Accept "affects/increases distance the solvent travels" for M1. Award [1] for descriptions of	

Mark-scheme answers

Chemistry HL | Paper 1A | Specimen 2025 | Q20 | 1 marks

20. A