

JEE MAIN THERMODYNAMICS — THERMOCHEMICAL EQUATIONS AND CALORIMETRY (MEASUREMENT OF ΔU AND ΔH) — PYQS

Max. Marks: 8

Questions: 2

Section B (Numerical) — 2 questions

- Q.1** If 3.365 g of ethanol (l) is burnt completely in a bomb calorimeter at 298.15 K, the heat produced is 99.472 kJ. The $|\Delta H_f^\circ|$ of ethanol at 298.15 K is _____ $\times 10^2$ kJ mol⁻¹. (Nearest integer)
- Given: Standard enthalpy for combustion of graphite = -393.5 kJ mol⁻¹
 Standard enthalpy of formation of water (l) = -285.8 kJ mol⁻¹
 Molar mass in g mol⁻¹ of C, H, O are 12, 1 and 16 respectively

[JEE Main 2026 (Online) 4th April Evening Shift]

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full solution



- Q.2** A sample of n-octane (1.14 g) was completely burnt in excess of oxygen in a bomb calorimeter, whose heat capacity is 5 kJ K⁻¹. As a result of combustion reaction, the temperature of the calorimeter is increased by 5 K. The magnitude of the heat of combustion of octane at constant volume is _____ kJ mol⁻¹ (nearest integer).

[JEE Main 2025 (Online) 3rd April Evening Shift]

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ANSWER KEY

Ques.	1	2					
Ans.	3	2500					