

Step Academy official

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STUDENT NAME	
PAPER CODE	106436
TIME ALLOWED	40
Paper Date	20-02-2026



CLASS	New 1st Year (FSC/ICS)
SUBJECT	Chemistry
TOTAL MARKS	25
Paper Type	

Q1. Choose the correct answer.

5X1=5

1. The enthalpies of all elements in their standard states are:

- (A) Unity (B) Zero (C) Always positive (D) Always negative

2. The standard heat changes occur at:

- (A) 25°C and 2 atm (B) 298 K and 1 atm (C) 25 °C and 1 mmHg (D) 273 K and 1 atm

3. In a bomb calorimeter, which quantity is held constant during the measurement of enthalpy change?

- (A) Pressure (B) Temperature (C) Volume (D) Heat

4. Hess's law of heat summation includes:

- (A) Initial reactants only (B) Joule's principle (C) Hess's law (D) Law of conservation of energy

5. Born Haber cycle is used to determine the:

- (A) Lattice energy (B) Enthalpy of sublimation (C) Enthalpy of vaporization (D) Enthalpy of neutralization

Q2. Write short answers of the following questions.

10X2=20

- 1 . Can an energy profile diagram definitively prove the exact molecular mechanism of a reaction? Explain briefly.
- 2 . How does the body utilize the energy released from the metabolism of food, and why is not all of it converted into useful work?
- 3 . Why is the calorie content of food usually expressed per serving size rather than per mole or per gram of the pure substance?
- 4 . State Hess's law of constant heat summation.
- 5 . State Hess's Law of Heat Summation in your own words and explain its significance in thermochemistry.
- 6 . Heat of solution of a substance is measured at infinite dilution. Why?
- 7 . Why it is necessary to mention the physical state of the reactants and products?
- 8 . Write down applications of Hess's law
- 9 . Define lattice energy and its S.I unit.
- 10 . How do we determine the ΔH in the laboratory for food, fuel etc?