

Chemical Energetics

Sr	Questions	Answers Choice
1	The change in internal energy is zero is.	A. Isothermal process B. Adiabatic process C. Exothermic process D. Endothermic process
2	The calorie content of food, often expressed in Calories (kcal), is fundamentally related to which thermodynamic quantity during its metabolism or combustion.	A. Enthalpy change B. Entropy change C. Gibbs free energy change D. Specific heat capacity
3	In an exothermic reaction, the energy of products is	A. Greater than reactants B. Less than reactants C. Equal to reactants D. Zero
4	When a bond is formed	A. Energy is absorbed B. Energy is released C. ΔH is always zero D. No energy change
5	The equation $q = mc \Delta T$ is used to find.	A. Enthalpy of formation B. Heat transferred C. Molar mass D. Volume
6	ΔH is negative and ΔS is positive then reaction is.	A. Equilibrium B. Always spontaneous C. Temperature depends D. Non-spontaneous
7	Consider a reaction with $\Delta H > 0$ and $\Delta S < 0$ this reaction will be	A. Spontaneous at all temperatures B. Non-spontaneous at all temperature C. Spontaneous only at high temperatures D. Spontaneous only at low temperature
8	If the pH of solution is 11, what is the $[\text{OH}^-]$ concentration in the solution.	A. $1 \times 10^{-3} \text{ M}$ B. $1 \times 10^{-11} \text{ M}$ C. $1 \times 10^{-2} \text{ M}$ D. $1 \times 10^{-14} \text{ M}$
9	A negative lattice energy temperature	A. Bond breaking B. Energy released C. Formation of covalent bond D. Spontaneity
10	Which of the following affects bond energy.	A. Bond length B. Bond length C. Atomic size D. All of these
11	Which is not a path function	A. Work B. Heat C. Entropy D. Temperature
12	The enthalpy change when one mole of ionic compound is dissolved in water is	A. Heat of hydration B. Heat of solution C. Heat of combustion D. Heat of atomization
13	The sign of ΔH during melting is.	A. Negative B. Positive C. Zero D. Can't be predicted
14	The system that exchanges heat but not mass	A. Closed B. Rigid C. Open D. Isolated

15	Which of the following is an extensive property.	B. Temperature C. Density D. Pressure
16	Which factor affects lattice energy	A. Ion size B. Ion charge C. Crystal structure D. None of these
17	Standard condition include all except	A. 298 K B. 0 oC C. 1 atm D. 1 M concentration
18	Standard enthalpy change refers to	A. STP B. 25 oC and 1 atm C. 100 oC D. 0 oC and 1 atm
19	The term "lattice energy" is applicable to	A. Ionic compounds B. Covalent compounds C. Gases D. Metals
20	The standard enthalpy of formation of elements in their standard state is	A. 0 B. -1 C. 1 D. 25