Maximum Marks: 09   **(OBJECTIVE TYPE)**   Time Allowed: 10 Min.

NOTE: Tick The Correct Option:

1) **In endothermic reaction, the heat content of the:**
   (a) Products is more than that of reactants   (b) Reactants is more than that of products
   (c) Both 'a' & 'b'   (d) Reactants and products are equal

2) **The exothermic process is:**
   (a) Evaporation   (b) Sublimation   (c) Respiration   (d) Boiling

3) **Thermochemistry deals with _____ changes in a chemical reaction.**
   (a) Pressure   (b) Volume   (c) Temperature   (d) Heat

4) **The enthalpy of formation of CO_2 is:**
   (a) -393.7 kJmol^{-1} (b) -41.6 kJmol^{-1} (c) -285.58 kJmol^{-} (d) +180.51 kJmol^{-1}

5) **Which is a state function?**
   (a) Temperature   (b) Heat   (c) Work   (d) All

6) **Electrical energy is, actually, a form of:**
   (a) K.E.   (b) P.E.   (c) Solar energy   (d) All

7) **A di-atomic molecule shows _____ motion.**
   (a) Only translational   (b) Translational and vibrational
   (c) Translational, vibrational and rotational   (d) None

8) **$25°C$ is the standard temperature in:**
   (a) Thermochemistry   (b) Thermodynamics   (c) Electrochemistry   (d) All

9) **For gases, at constant pressure:**
   (a) $\Delta H = \Delta E$ (b) $\Delta H > \Delta E$ (c) $\Delta H < \Delta E$ (d) $\Delta H \cong \Delta E$

Maximum Marks: 16   **(SUBJECTIVE TYPE)**   Time Allowed: 30 Min.

SECTION-I

Q.2: Give brief answers to the following questions: **(16)**

i. Define thermochemistry. Why is its scope limited?

ii. Define boundary of the system.

iii. What is state and state function? Explain with example.

iv. Differentiate between heat and temperature.

v. Prove that at constant volume, $\Delta E = q_v$.

vi. Why $\Delta H = \Delta E$ for liquids and solids? OR Why ΔH and ΔE have same values for the reactions taking place in solid or liquid states?

SECTION-II

NOTE: Attempt All Questions: **(04)**

Q.3: Differentiate between spontaneous and non-spontaneous reactions with examples.