

## Worksheet: Thermodynamics

Karnataka State Board · Class 11 · Chemistry · 5 questions · 15 marks

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Score: \_\_\_\_\_ / 15

**Q1.** Is bond breaking endothermic or exothermic, and what about bond formation? [2 marks]

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**Q2.** What is the significance of  $\Delta G = 0$ ? [2 marks]

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**Q3.** For  $\text{N}_2 + 3\text{H}_2 \rightarrow 2\text{NH}_3$ ,  $\Delta H = -92.4$  kJ at 298 K. Find  $\Delta U$  given  $\Delta n_g = -2$ . [3 marks]

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**Q4.** For a reaction  $\Delta H = 30$  kJ and  $\Delta S = 100$  J/K. Find the temperature above which it becomes spontaneous. [3 marks]

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**Q5.** Calculate  $\Delta_f H$  of  $\text{C}_2\text{H}_6$  given  $\Delta_c H(\text{C}) = -393.5$ ,  $\Delta_f H(\text{H}_2\text{O}) = -285.8$ , and  $\Delta_c H(\text{C}_2\text{H}_6) = -1560$  kJ/mol. [5 marks]

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