

SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN
(AUTONOMOUS)

(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)
Chromepet, Chennai - 600 044.

B.Sc.Chemistry - END SEMESTER EXAMINATIONS - NOV'2024

SEMESTER - IV

22UCHCT4007 - Thermodynamics

Total Duration : 2 Hrs.30 Mins.

Total Marks : 60

Section B

Answer any **SIX** questions ($6 \times 5 = 30$ Marks)

1. Discuss the postulates of kinetic theory of gas.
2. Derive an expression which relates C_p and C_v .
3. Explain exothermic and endothermic reactions with examples.
4. Explain the heat of formation and heat of combustion reactions.
5. Define Fugacity. How will you determine fugacity by graphical method?
6. Discuss about the activity and activity co-efficient.
7. State the law of mass action and derive an expression for equilibrium constant.
8. Explain the Nernst heat Theorem.

Section C

Answer any **THREE** questions ($3 \times 10 = 30$ Marks)

9. Derive Vanderwaal's equation of state. (10)
10. Describe the process of water calorimeter and bomb calorimeter. (5 + 5)
11. a. Derive Gibb's-Helmholtz equation (5)
b Derive Gibb's-Duhem equation (5)
12. State Le-Chatlier's principle. How does the formation of ammonia take place with the effect of change in temperature and pressure? (10)
13. Determine the absolute entropy of a substance using third law of thermodynamics. (10)
