

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 APRIL-2023

SEMESTER - III

20UCHCT3005 - General Chemistry - V

Total Duration : 2 Hrs 30 Mins.

Total Marks : 60

Section B

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

1. a) Explain the reactivity of 1° , 2° , 3° alcohols.
b) Give any 3 ring substitution reactions of phenols.
2. a) Explain Gibbs Helmholtz equation.
b) Describe the word meant by Activity and Activity co-efficient.
3. Give and predict the preparation, properties, structure and uses of DiBorane.
4. a) Examine the short notes on Electrolytic refining and Van Arkel processes.
b) Give any two applications of steel alloys.
5. a) Show the limitations of I law of thermodynamics? Interpret the need of II law.
b) State Carnot's theorem.
6. What is Chemical potential? Solve the effect of temperature on chemical potential.
7. Explain the preparation, properties, structure and uses of NaBH_4 .
8. a) Justify the role of carbon in steel.
b) How will you classify the different types of steel.

Section C

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

9. a) Describe the following reactions and mechanism.
i) Kolbe's reaction ii) Riemer-Tiemann and iii) Gattermann reaction.
b) Explain the different electrophilic reactions.
10. a) Explain the concept of entropy.
b) Solve the calculations of entropy changes with changes in T,P,V.
11. a) Explain the Duhem-Margulus equation.
b) Evaluate and assign Gibbs- Duhem equation.
12. a) Discuss the classification, preparation, properties and uses of Carbides.
b) Predict the structures of different silicates.
13. a) Explain the various refining methods used in metallurgy process.
b) Evaluate the flow chart for the extraction of U and Th.
