

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 NOVEMBER -2023

SEMESTER - II

20UCHCT2004 - General chemistry

Total Duration : 2 Hrs 30 Mins.

Total Marks : 60

Section A

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

1. a). Describe the acidic nature of phenols.
b). Prepare and write Williamson,s synthesis.
2. Show Gibbs free energy variation with temperature and pressure.
3. a). Predict electron deficiency nature of Boron halides.
b).Give the preparation ,properties and uses of Borazole.
4. a). What is meant by metallurgy?
b). Discuss the principles behind metal refining.
5. a). State II law of thermodynamics.
b). Distinguish and illustrate between reversible and irreversible process.
6. a). Show and apply the criteria for spontaneity.
b).Solve the Gibbs- Duhem equation.
7. Give the preparation, properties, structure and uses of Di borane.
8. a). Explain and distinguish the different types of steel.
b).Examine your knowledge about the heat treatment of steel.

Section B

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

9. Write the following equation and explain.
a). Mechanism of nitration b). Coupling reaction
c). Kolbe's reaction d) Riemer-Tiemann reaction
e). Gattermann reaction and f). Houben- Hoesh reaction.
10. a). With neat sketch, Discuss and predict the equation for Carnot cycle.
b).Explain Trouton,s rule and apply its applications.

Contd...

11. a). Evaluate Gibbs- Helmholtz equation and give its applications.
b). What is meant by fugacity? Explain the determination process of fugacity of gas.
12. a). Compare and predict the properties of carbon and silicon.
b). Explain the classification of silicates.
13. Explain and associate the various steps of the extraction and uses of Ni and U.
