

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. END SEMESTER EXAMINATIONS APRIL-2022

SEMESTER - I

20UPHAT1001 - ALLIED CHEMISTRY I

Total Duration : 3 Hrs.

Total Marks : 60

**Section A**

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

1. Explain the shape of  $IF_7$  and  $BrF_3$ .
2. Describe the role of carbon in the properties of steel.
3. Differentiate (i) intensive and extensive properties  
(ii) isothermal and adiabatic process
4. Explain the principle of paper chromatography and its application.
5. Discuss the structure of benzene.
6. Explain Van Arkel process and zone refining process.
7. Explain the geometrical isomerism of maleic acid and fumaric acid.
8. Describe bonding, anti bonding and non bonding orbitals.

**Section B**

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

9. With the help of M.O theory explain the structure of  $N_2$  and  $O_2$ .
10. Explain heat treatment of steel.
11. Describe the principle and applications of TLC and column chromatography.
12. Explain Carnot cycle and efficiency of heat engine.
13. Elucidate the structure of naphthalene.