

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 2025

SEMESTER - III

**22UCHCT3006 - Chemistry of s and p Block Elements**

Total Duration : 2 Hrs.30 Mins.

Total Marks : 60

### Section B

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

1. Explain why metal complexes with crown ethers are known as "Wrap around" Complexes.
2. Discuss any five exceptional properties of Beryllium from other alkaline metals.
3. Explain electron deficiency behavior of Boron halides.
4. Discuss the classification and structure of silica.
5. Write the uses of
  - (i) Ammonium Sulphate (1M)
  - (ii) Superphosphate of lime (2M)
  - (iii) Triple super phosphate (2M)
6. Explain the preparation, properties and uses of ozone.
7. Explain the preparation, properties and uses of  $\text{BrF}_5$  and  $\text{ClF}_3$ .
8. What are pseudo halogens? Ascertain the structure of pseudohalogens of cyanide and azide.

### Section C

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

9. Elaborate the anomalous behaviour of lithium from the other alkali elements.
10. Complete the following reactions ( $5 \times 2 = 10$  M)
  - (i)  $\text{NaBH}_4 + \text{I}_2 \rightarrow$
  - (ii)  $\text{B}_2\text{H}_6 + 3\text{O}_2 \rightarrow$
  - (iii)  $\text{LiAlH}_4 \rightarrow$
  - (iv)  $\text{B}_2\text{H}_6 + 2\text{NaH} \rightarrow$
  - (v) Borazine on hydrolysis  $\rightarrow$

Contd...

11. Describe the structure and uses of (5x2=10M)
- (i) hyponitrous acid
  - (ii) metaphosphorus acid
  - (iii) pyrophosphoric acid
  - (iv) hydrazoic acid
  - (v) dinitrogen tetroxide
12. Explain the preparation, properties and structure and uses of  $\text{SO}_2$  and peroxy sulphuric acid.
13. Discuss the preparation and properties of  $\text{XeF}_2$  and  $\text{XeF}_4$ .

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