

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.Physics - END SEMESTER EXAMINATIONS - APRIL 2025

SEMESTER - I

**22UPHAT1001 - Chemistry for Physics -I**

Total Duration : 2 Hrs.30 Mins.

Total Marks : 60

### Section B

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

1. Distinguish between accuracy and precision.
2. Illustrate the process of fractional distillation.
3. Give the molecular structures of  $\text{NH}_3$  and  $\text{H}_2\text{O}$  based on hybridization.
4. Discuss about hydrogen bonding and its types.
5. Write a note on primary and secondary standard solutions with examples.
6. Derive Henderson-Hasselbalch equation and mention its significance.
7. Explain the working method of calomel electrode with neat diagram.
8. Write down the composition and use of water gas and natural gas.

### Section C

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

9. a. Write down the principle of chromatographic technique. (2)  
b. Elucidate the separating process of column chromatographic technique. (8)
10. a. Explain the structure of  $\text{NaCl}$ . (5)  
b. Explain the structure of ethene using hybridization method. (5)
11. a. Describe the acid-base titration (strong acid Vs strong base). (5)  
b. Give a brief account on indicators and its types. (5)
12. Explain the working method of Lead-acid and Lithium ion batteries with cell representation and neat diagram. (5+5)
13. a. Explicate nuclear fission and fusion reactions with suitable examples.  
b. Discuss the medicinal uses of radio isotopes. (5)

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