

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 NOVEMBER-2022

SEMESTER - I

22UPHAT1001 - Chemistry for Physics I

Total Duration : 2 Hrs 30 Mins.

Total Marks : 60

Section A

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

1. Explain briefly about the storage and handling of chemicals.
2. Describe the principle of titrations.
3. Classify batteries and explain in detail.
4. Explain the composition and uses of the following fuels:
 - i) Bio-gas
 - ii) Water gas
 - iii) producer gas
5. Describe the structure of NaCl and NH_3 .
6. Classify various concentration terms and explain any two of it.
7. Sketch and explain about the principle and working of calomel electrode.
8. In what parameter the quality of fuels are examined? Justify- among solid, liquid and gaseous fuel, gaseous fuel is good? Why?

Section B

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

9. Explain the principle and applications of column chromatography. Describe how errors in chemical analysis can be eliminated and minimized?
10. Discuss the applications of chromatographic techniques. Classify hydrogen bonding. Give its importance in biological systems.
11. Distinguish between primary and secondary standards. Outline acid-base titrations.
12. Define buffer. Obtain an expression to relate pH of an acidic buffer to the concentration of salt and acid. How are Li-ion batteries organized? Explain its electrode reactions.
13. Differentiate between nuclear fission and fusion reactions. Appraise applications of radio isotopes in medicine and agriculture fields.
