

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 - V

20UCHCT5009 - Inorganic Chemistry - I

Total Duration : 2 Hrs 30 Mins.

Total Marks : 60

Section A

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

1. Describe the Stability of Nucleus in terms of N/P ratio.
2. The nitrogen nucleus consists of seven protons and eight neutrons making a total mass of 15.12409 amu. But the actual mass is found to be 15.00011 amu. Calculate the binding energy per nucleon.
3. Explain the Biological aspects of Magnesium.
4. Discuss the properties of Titanium group metals under the following headings.
(a) Oxidation States. (b) Complex Formation.
5. What is Lanthanide Contraction ? Mentions its effect.
6. Explain the measurement of radiation by GM method.
7. Write notes on Soxhlet Extraction.
8. Discuss the Physical Methods of Nano Particle Preparation.

Section B

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

9. (a.) Explain the forces between Nucleons.
(b.) Discuss liquid drop model of Nucleus.
10. (a.) Explain group displacement law with an example.
(b.) Compare Nuclear Fission and Fusion reactions.
11. (a.) Discuss the properties of vanadium group elements.
(b.) Explain the Biological Role of Sodium.
12. (a.) Explain the ion exchange method for the separation of Lanthanides.
(b.) Compare the chemistry of Lanthanides with actinides.
13. Explain the Synthesis of nano materials by
(a.) Sol-gel Method. (b.) Plasma arc Method.
