

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.

M.Sc.Chemistry- END SEMESTER EXAMINATIONS APRIL - 2024

SEMESTER - IV

**22PCHCT4010 - Advanced Inorganic Chemistry**

Total Duration : 2 Hrs. 30 Mins.

Total Marks : 60

### Section B

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

1. Sketch the mechanism for stereoregular polymerization using homogeneous Ziegler Natta catalyst.
2. Show the similarities and differences between haemoglobin and myoglobin.
3. List and explain the different steps of the nitrogen cycle process.
4. Explain photonuclear and thermonuclear reactions with an example.
5. Illustrate the methods of activation of molecular hydrogen in hydrogenation of unsaturated hydrocarbons by Wilkinson catalyst.
6. Relate the role of photosystem 1 and 2 in photosynthesis?
7. Explain the types of radioactive decay in detail.
8. Organize the applications of radioactive tracer in the diagnosis and treatment in the field of medicine.

### Section C

I - Answer any **TWO** questions ( $2 \times 10 = 20$  Marks)

9. Illustrate the sequence of mechanistic steps involved in hydroformylation of unsaturated hydrocarbons and highlight the disadvantages of the cobalt catalysts.
10. Relate the biological dioxygen transport and storage with metal transport and storage. Organize the symptoms and methods of prevention of carbonmonoxide poisoning.
11. Organize the symptoms and methods of prevention of carbonmonoxide poisoning.
12. Examine the detection and determination of activity by Geiger-Muller counter.

II - Compulsory question ( $1 \times 10 = 10$  Marks)

13. "Neutron Activation Analysis (NAA) is used in geology to aid in researching the processes". Justify with mechanism.

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