

## ❖ IMPORTANT QUESTIONS OF CHEMISTRY V-SEM(PAPER-V).

- **I-UNIT**

1. What is crystal field splitting energy? Discuss the Merits & Demerits of Crystal field theory.
2. What is Ziegler –natta catalyst polymerization?
3. Discuss the Crystal field splitting of d-orbitals in an octahedral complex.
4. Discuss the splitting of d-orbitals in square planar complexes based on crystal field theory.
5. Discuss the Gouy's method for the determination of magnetic susceptibility of a metal complex.
6. Describe the Job's method for the determination of composition of a Metal complex?
7. Discuss about the applications of Co-ordination compounds in medicine for removal of Toxic metal ions.
8. How metal complexes are useful in cancer therapy.
9. Define closo, nido & arachno compounds.
10. Explain Wade's rule by giving suitable examples.

- **II-UNIT.**

11. Write short notes on coupling reaction of diazonium salts.
12. Explain about the use of amine salts as phase transfer catalyst.
13. Discuss Heinsberg method of separation of amines.
14. Write Chichibabin reaction with a suitable example.
15. What are the Electrophilic substitution reactions undergone by Pyrrole?
16. Discuss Paul-Knorr synthesis for the preparation of Furan, Pyrrole & Thiophene.
17. Give an account on basicity of Pyridine.

- **III-UNIT**

18. Discuss the Salient Features of Collision theory of reaction rates.

19. What is the rate of reaction? Discuss the factors that can alter the reaction rates.
20. Derive an expression for rate constant & half life of a first order reaction. Give units for rate constant.
21. Derive an expression for the rate constant and half life period of Zero-order reaction.
22. Discuss about the various methods for determination of Order of reaction.

- **IV-UNIT.**

23. What finger print region in IR spectra? How it is useful?
24. Show different kinds of transitions in UV spectra?
25. Explain Chromophore, Auxochrome, Bathochrome & hypsochromic shifts in UV spectra of Molecules with examples.
26. Explain the absorption Characteristics of following Chromophores
- i) Diene
  - ii) Enone
  - iii) Aromatic compounds.
27. State and explain Stark-Einstein's law of equivalence.
28. How is quantum efficiency of a photochemical reaction determined experimentally.
29. Sketch Jablonski diagram and explain the various processes involved.
30. Explain the Fluorescence and Phosphorescence with examples.

❖ **IMPORTANT QUESTIONS OF CHEMISTRY V-SEM(PAPER-VI).**

● **I-UNIT**

1. Define Pyrometallurgy & Hydrometallurgy in detail.
2. Define Electrometallurgy?
3. Write a note on production of selected Non-ferrous metals(Cu,Ni,Zn)

● **II-UNIT**

4. Explain the sources of natural dyes in detail?
5. Explain various Synthetic Dyes ?
6. Define different methods for extraction of coloring material from natural dyes.
7. Define Mordant & explain various types of Mordants?

● **III-UNIT**

8. Define catalyst & Catalysis?
9. Explain Homogenous & Heterogenous catalysis with specific examples?
10. General Characteristics of Catalytic reactions?
11. Define phase transfer catalysis in detail?

● **IV-UNIT**

12. Define Enzyme catalysis?
13. Define factors affecting enzyme catalysis?
14. Explain (i) Invertase in inversion of cane sugar.  
(ii) Maltase in conversion of maltose to glucose.  
(iii) Urease in decomposition of Urea &  
(iv) Zymase in conversion of glucose to ethanol.