



25022451

QP CODE: 25022451

Reg No :

Name :

M.Sc DEGREE (CSS) SPECIAL REAPPEARANCE EXAMINATION, APRIL 2025

Third Semester

CORE - CH500301 - STRUCTURAL INORGANIC CHEMISTRY

M.Sc CHEMISTRY, M.Sc ANALYTICAL CHEMISTRY, M.Sc POLYMER CHEMISTRY

2019 ADMISSION ONWARDS

90EFE078

Time: 3 Hours

Weightage: 30

Part A (Short Answer Questions)

*Answer any **eight** questions.*

Weight 1 each.

1. How Edge dislocation is different from Screw dislocation in Line defects?
2. Discuss the band structure of fullerene.
3. What are magnetoplumbites?
4. What is meant by Photovoltaic effect?
5. What is the bonding in Sulphur-Nitrogen compounds?
6. What is Drug design using C_2B_{10} ?
7. What are the important applications of poly(ferrocenylsilane)s?
8. What do you meant by Nucleation?
9. Explain any one method for zeolite synthesis.
10. Write a short note on Superparamagnetism.

(8×1=8 weightage)

Part B (Short Essay/Problems)

*Answer any **six** questions.*

Weight 2 each.

11. Write a note on diffusion in solid state reactions and the different mechanisms involved in diffusion.
12. Write a note on order-disorder transitions.
13. Explain Hall effect and derive its equation.





14. Write a note on fullerene and Graphene.
15. What are Zeolites and how are they prepared? Describe their applications.
16. Describe the structure, synthesis and bonding in Diborane.
17. What are the main methods for the synthesis of cage like structures of Phosphorous ? Explain its structure and bonding.
18. Write a short note on Mercuride clusters in amalgams.

(6×2=12 weightage)

Part C (Essay Type Questions)

*Answer any **two** questions.*

*Weight **5** each.*

19. Explain different single crystal growth techniques.
20. Explain the mechanism of High Temperature Super conductors and its applications.
21. a) Write a note on polymers with Organometallic moieties as Pendent groups
b) Explain Condensation polymers based on Rigid rod Polyynes.
22. What are Magnetic Nanoparticles? Disuss in detail about their various applications in Biomedical field.

(2×5=10 weightage)

