

QP CODE: 25047662



Reg No :

Name :

M.Sc DEGREE (CSS) EXAMINATION, NOVEMBER 2025

Third Semester

M Sc Industrial Chemistry

ELECTIVE - CH900301 - CHEMISTRY OF ADVANCED MATERIALS

2020 ADMISSION ONWARDS

451D754E

Time: 3 Hours

Weightage: 30

Part A (Short Answer Questions)

*Answer any **eight** questions.*

*Weight **1** each.*

1. Discuss about the general features of Ceramics.
2. What are the factors that affect the Diffusion process in solids?
3. Briefly discuss about carbon nanotubes.
4. What are nanowires ?
5. Write a short note on liquid crystalline Polyether Ketone.
6. What are glass ceramics?
7. Write any three applications of ceramic superconductors.
8. What are particulate composites?
9. What is the application of Piezoelectric materials ? Give any two examples.
10. What are ceramic magnetic materials? Give an example.

(8×1=8 weightage)

Part B (Short Essay/Problems)

*Answer any **six** questions.*

*Weight **2** each.*

11. Write a short note on Materials Design and Selection.
12. Listout the different applications of diffusion.
13. Write a short note on the classification of nanomaterials.
14. What is the significance of PVDF?
15. Briefly discuss the synthesis and processing of crystalline ceramics.





16. What is Meissner effect? Explain Type I and Type II Superconductors.
17. What is the difference between intercalated and Exfoliated nano composites?
18. Explain the different techniques in which Thin film deposition takes place.

(6×2=12 weightage)

Part C (Essay Type Questions)

*Answer any **two** questions.*

Weight 5 each.

19. Explain in detail about the various methods involved during the synthesis of Nanoparticles ? Write a short note on Graphenes.
20. What are electrically active polymers? How they become conducting? Explain the mechanism of conduction .
21. Explain about the features and applications of (1) Nanocomposites (2) Bionanocomposites.
22. (1)What is the application of Integrated Circuit ?
(2) Explain about the Integrated Circuit Processing technique.
(3)Explain the features of Semiconductors using Band theory of solids.

(2×5=10 weightage)

