

SIXTH SEMESTER B.Sc. DEGREE EXAMINATION, APRIL 2024**(Regular/Improvement/Supplementary)****CHEMISTRY****GCHE6B12T: ADVANCED AND APPLIED CHEMISTRY****Time: 2 Hours****Maximum Marks: 60****SECTION A: Answer the following questions. Each carries *two* marks.****(Ceiling 20 Marks)**

1. Distinguish between macromolecular and multimolecular colloids with examples.
2. Mention two uses each of refractory carbides and refractory borides.
3. What do you mean by supramolecular chemistry?
4. How does combinatorial chemistry differ from traditional methods?
5. Define saddle point.
6. Name any four softwares used in computational chemistry calculations.
7. Define the term antipyretic. Give an example.
8. Mention the classification of nanomaterials based on dimensionality.
9. Give the chemical names of (i) a narcotic analgesic and (ii) a non-narcotic analgesic.
10. What is meant by coagulation of a colloidal solution? Give an example.
11. What are BHA and BHT? Mention their important applications.
12. Give the full form of IPR. What is the aim of IPR?

SECTION B: Answer the following questions. Each carries *five* marks.**(Ceiling 30 Marks)**

13. Explain the terms electrical double layer and zeta potential.
14. Distinguish between Ab Initio and Semi-Empirical Methods.
15. Explain the preparation and cleansing action of soap.
16. Discuss with examples the role of permitted and non-permitted colours in the current food industry.
17. Explain the steps involved in processing of data.
18. Write short notes on type of journal publications.
19. Distinguish between antiseptics and antibiotics with two examples each.

SECTION C: Answer any *one* question. Each carries *ten* marks.

20. (a) Define green chemistry.
(b) Discuss the term green solvents.
(c) Explain the term green synthesis and illustrate it by discussing the synthesis of ibuprofen.
21. Explain briefly the principle of manufacture of cement and give the composition of Portland cement. Explain the chemistry behind setting of cement.

(1 x 10 = 10 Marks)