19. Explain the techniques of topdown synthesis (any two).

20. Write a detailed notes on molecular recognition and DNA based sensors.

(For candidates admitted from 2015–2016 onwards)

M.Sc. DEGREE EXAMINATION, NOVEMBER 2023.

Chemistry

GREEN CHEMISTRY AND NANO SCIENCE

Time : Three hours Maximum : 100 marks

SECTION A — (10 × 2 = 20)

Answer ALL questions.

1. Write any two goals of Green chemistry.

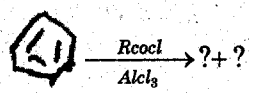
2. Describe the role of catalyst in green synthesis with examples.

3. Define phase transfer catalyst give example.

4. What are the applications of Ionic liquids?

5. Define the term microbial fermentation.

6. Complete the following reaction and name it



7. Define Nano catalyst. Give example.

8. What are Zeolites? Write their functions.

9. Define dopping.

10. Discuss the advantages of CNT.

SECTION B — (5 × 7 = 35)

Answer ALL questions, choosing either (a) or (b).

11. (a) Define Green chemistry and explain its advantages.

Or

(b) Describe the role of green solvents with suitable example.

12. (a) Write notes on multicomponent system.

Or

(b) Write notes on friedal crafts reaction.

13. (a) Explain the role of biocatalyst in Baeyer-Villiger reaction.

Or

(b) Write a detailed notes on the reactions of supercritical CO_2.

14. (a) Write notes on solvothermal synthesis method.

Or

(b) How are the nano materials synthesized from biological agents?

15. (a) Comment on the following:

(i) Chemistry modified CNT

(ii) DNA as a nanomaterial

Or

(b) Write notes on the synthesis and uses of SWCNT.

SECTION C — (3 × 15 = 45)

Answer any THREE questions.

16. Explain the following:

(a) Need of Green synthesis in the emerging scenario.

(b) Role of students in attaining sustainable development.

17. Write notes on microwave assisted synthesis and narrate the merits and demerits of it.

18. Explain how Friedal crafts reaction is an alternative photochemical synthesis.