(Pages : 2)	Name
	Page No

# FOURTH SEMESTER M.Sc DEGREE (REGULAR/SUPPLEMENTARY)

No. of Street, Street, St.

(CBCSS)

Chemistry

CHE  $_{
m 4E}$   $_{
m 06}$ —NATURAL PRODUCTS AND POLYMER CHEMISTRY

Time: Three Hours (2019 Admission onwards)

Maximum: 30 Weightage

#### Section A

Answer any eight questions.

Each question carries a weightage of 1.

- X. What are the importances of aromatherapy?
- $2. \quad \text{What is the mechanism of action of prostaglandins?} \\$
- What are the biological functions of Anthocyanins?
- Distinguish between a dye and a pigment.
- What is meant by group transfer polymerization? Give an example.
- What are living polymers? What are its uses?
- What is mean by polymer tacticity?
- Discuss the thermodynamics of polymer solutions.
- What are liquid crystalline polymers?
- What are photo-responsive polymers? What are their applications?

 $(8 \times 1 = 8 \text{ weightage})$ 

#### Section B

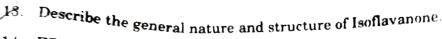
Answer any six questions.

Each question carries a weightage of 2.

- 1. Briefly explain the isolation of Citronella oil. What are its important constituents?
- 12. Discuss the structure and biosynthesis of terpinoids.

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- 14. What is β-carotene? What is its uses and benefits?
- 15. Explain the emulsion and dispersion polymerization techniques
- 16. Discuss the various methods used for the determination of molecular weight of a polymer.
- 17. Describe a method of determination of degree of cross linking of a polymer.
- 18. Briefly explain the phase morphology of a polymer.

 $(6 \times 2 = 12 \text{ weightage})$ 

### Section C

## Answer any two questions.

Each question carries a weightage of 5.

- 19. (a) Explain a method of isolation of Antocyanin and its characterization.
  - (b) Discuss the structural elucidation of Ergosterol.
- 26. (a) Explain the classification of alkaloids.
  - (b) Explain the common cyanine dyes. Discuss their uses in biotechnology and in industry  $\gtrsim$
- 21. (a) Explain the kinetics and mechanism of cationic and anionic polymerizations.
  - (b) With suitable examples, explain the polymer stereochemistry.
  - 22. (a) Describe the methods of synthesis of polypropylene. Explain the applications of polypropylene.
    - (b) Explain the use of polymers in organic synthesis.

 $(2 \times 5 = 10 \text{ weightage})$