

21P413

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Name: .....

Reg.No: .....

**FOURTH SEMESTER M.Sc. DEGREE EXAMINATION, APRIL 2023**

(CBCSS - PG)

(Regular/Supplementary/Improvement)

**CC19P CHE4 E06 - NATURAL PRODUCTS AND POLYMER CHEMISTRY**

(Chemistry)

(2019 Admission onwards)

Time : 3 Hours

Maximum : 30 Weightage

**Section A**

Answer any *eight* questions. Each question carries 1 weightage.

1. Write three major constituents of Citronella oil. Draw their structures.
2. What are Oleoresins? Describe the Oleoresins of Pepper.
3. Describe the classification of Steroids.
4. Explain a method for the confirmation of keto group in steroids. Explain with example.
5. Draw the structure of piperine. What is its physiological activity?
6. Write the structure of  $\beta$ -ionone ring.
7. How do isotactic, syndiotactic, and atactic polymers differ in terms of their crystallinity?
8. Explain Light scattering methods.
9. All polymers are macromolecules but all macromolecules may not be polymers. Justify this statement.
10. What is living polymers?
11. What is meant by polydispersity index?
12. Draw the structure of Morphine. Which class of alkaloid is morphine?

**(8 × 1 = 8 Weightage)**

**Section B**

Answer any *four* questions. Each question carries 3 weightage.

13. Write a short note on the isolation techniques for Carotenoids and Anthocyanins.
14. Briefly describe the synthesis of Abeitic acid.
15. Discuss about the synthesis of Prostaglandins.
16. Discuss any five commonly found anthocyanidins present in flowers.
17. Explain Vinyl and acrylic polymers.

18. Explain polyesters.
19. Discuss briefly the kinetics of anionic polymerization.

**(4 × 3 = 12 Weightage)**

### **Section C**

Answer any *two* questions. Each question carries 5 weightage.

20. Briefly describe the structure elucidation of following steroids (1) Oestrone (2) Testosterone
21. Discuss in detail the importance of supramolecular systems and molecular recognition in chemistry.
22. Discuss degree of crystallinity and X-ray diffraction.
23. What are conducting polymers? How are they formed? Discuss the electrical conductivity of polyanilines and polypyrrols.

**(2 × 5 = 10 Weightage)**

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