20P412 (Pages: 2) Name: ……..…...

Reg. No……..

FOURTH SEMESTER M.Sc. DEGREE EXAMINATION, APRIL 2022

(CBCSS - PG)

(Regular/Supplementary/Improvement)

CC19P CHE4 E06 - NATURAL PRODUCTS AND POLYMER CHEMISTRY

(Chemistry - Elective Course)

(2019 Admission onwards)

Time: Three Hours Maximum: 30 Weightage

Section A

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

1. Draw the molecular structure of papaverine and its biosynthetic precursor
2. Explain briefly on indigo and phthalocyanine dyes.
3. What is PMMA? Mention its applications.
4. Explain on which basis, the classification of natural products is carried out?
5. Explain briefly on the molecular structure of Anthocyanins.
6. Define the term copolymer composition drift.
7. Illustrate isoprene rule with suitable example.
8. Distinguish between the terms, Tg and Tm of polymers.
9. Describe general method of isolation of alkaloids.
10. Demonstrate structural features of prostaglandin molecule.

(8 × 1 = 8 Weightage)

Section B

Answer any ***six*** questions. Each question carries 2 weightage.

11. Give a brief account on Chirality and Conformation of polymer chains.
12. Write a note on (i) Diene rubbers (ii) Silicone rubbers.
13. Give the Flory-Reiner equation. Explain the terms involved.
14. Give a brief account on the constituents of (i) sandalwood oil and (ii) citronella oil.
15. Explain the conversion of cholesterol to Progestrone.
16. Discuss the synthesis and applications of polycarbonates.
17. Demonstrate the concept of molecular recognition with suitable examples.
18. Give the properties and application of polymers with NLO properties.

(6 × 2 = 12 Weightage)

Section C

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

19. Discuss the structure elucidation and synthesis of abietic acid.
20. Illustrate in detail about the Photo responsive and photorefractive polymers.
21. Describe in detail the molecular structure and photo physical properties of squarene dyes.
22. Discuss in detail about the Atom Transfer Radical Addition−Fragmentation mechanism of polymerization with suitable example.

(2 × 5 = 10 Weightage)

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