16P410 (Pages:2) Name…….

Reg. No……..

FOURTH SEMESTER M.Sc. DEGREE EXAMINATION, MARCH 2018

(Regular/Supplementary/Improvement)

(CUCSS - PG)

CC15 PCH4 E06 – NATURAL PRODUCTS & POLYMER CHEMISTRY

(Chemistry)

(2015 Admission onwards)

Time: Three Hours Maximum: 36 Weightage

Section A

Answer ***all*** questions, Each question carries ***1*** weightage.

1. Describe general method of isolation of alkaloids.
2. What are the important constituents of sandalwood oil?
3. Write the structure of Indigo, How it is produced in nature?
4. What is glass transition temperature?
5. What Dieles hydrocarbon? How you will obtain it from a steroid?
6. Write a note on chalcone. How will you get flavonol and Anthocyanidine from chalcone?
7. Vitamin C is a vitamin found in fruits and vegetables. It cannot be stored in our body. Why? Write the structure of vitamin C.
8. Vulcanisation improves elasticity of rubber. What is vulcanization? How does it improve this property? Write two examples for synthetic rubber.
9. Write a note on classification of carbohydrates. Give an example for an oligosaccharide.
10. Write a note on tacticity of polymers.
11. What are spherullites? Explain.
12. Give the Flory-Reiner equation. Explain the terms involved.

(12 x 1 = 12 weightage)

Section B

Answer any ***eight*** questions, Each question carries ***2*** weightage.

13. What is meant by ring opening polymerisation?
14. Distinguish rigid and flexible PVC. What are their important applications?
15. What are Ziegler-Natta catalysts? How can these catalysts effect the polymerisation of ethylene and propylene?
16. What are the requirements for a polymer to show electrical conductivity? What is doping? Explain.
17. Use Flory-Huggins theory to predict the enthalpy change associated with polymer solution process.

18. Give an account of different natural polymers and their major applications.
19. How will you determine the position of a hydroxyl group and a double bond in cholesterol?
20. Explain the biological activity of prostaglandins.
21. What is DMAP ? How would you produce terpenes from it?
22. Give the steps involved in the synthesis of atropine.
23. Write a note on molecular recognition.
24. Discuss in detail any two methods for determining molecular weights.

(8 x 2 = 16 weightage)

Section C

Answer any ***two*** questions, each question carries ***4*** weightage.

25. What are specialty polymers? Briefly describe the salient features of any one class of specialty polymers.
26. Compare the relative merits and demerits of four techniques of polymerization.
27. Elucidate the structure of quinine.
28. a) Write the step in conversion of cholesterol to progesterone.
    b) Write any one synthesis of isoflavone.

(2 x 4 = 8 weightage)

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