

Reg. No. :

Name :

Third Semester B.Sc. Degree Examination, March 2022

First Degree Programme Under CBCSS

Chemistry

Complementary Course for Home Science

CH 1331.5 : ORGANIC CHEMISTRY – II

(2019 Admission)

Time : 3 Hours

Max. Marks : 80

SECTION – A

Answer **all** questions. Answer in **one** word to maximum of **two** sentences. Each question carries **1** mark.

1. What are associated colloids?
2. What do you mean by chromatogram?
3. What type of solvents is generally employed in chromatography?
4. What is Brownian movement?
5. Name any indicator dye used in acid-base titration.
6. Give a short account of the isolation of essential oils.
7. Draw the structure of Buna-N.
8. Mention two general characteristics of alkaloids.

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9. Write the molecular formula of Nicotine.
10. What are homopolymers? Give one Example.

(10 × 1 = 10 Marks)

SECTION – B

Short answer type (Not to exceed **one** paragraph). Answer any **eight** questions from the following. Each question carries **2** marks.

11. What are protective colloids? Explain.
12. Two beakers A and B contain ferric hydroxide sol and NaCl solution respectively. When a beam of light is allowed to converge on them, (in a darkened room), beam of light is visible in beaker A but not in beaker B. Give the reason. What is this effect called?
13. Write down the principle of differential migration in chromatography.
14. What are the advantages of chromatography over other techniques?
15. Explain the terms direct and indirect dyes.
16. What is meant by vulcanisation of Rubber? How is vulcanised rubber superior to raw rubber?
17. Explain the stability of colloids? What are the important factors affecting stability?
18. Briefly explain the chemical properties and uses of Menthol.
19. Give the structure of phenolphthalein. Account for its colour in an acid and a strong base solution.
20. Briefly explain any two chemical properties and uses of Geraniol.
21. Illustrate with examples the terms of addition polymerization and condensation polymerization.
22. Write a short note on Neoprene.

23. Write a short note on structure and importance of Alizarin.
24. What are the important features of an adsorbent?
25. Differentiate LDPE and HDPE.
26. What is R_f value? How R_f value important in identifying the components in a mixture.

(8 × 2 = 16 Marks)

SECTION – C

Short essay (Not to exceed **120** words). Answer any **six** questions from the following. Each question carries **4** marks.

27. Differentiate between
 - (a) Lyophilic and Lyophobic sol.
 - (b) Macromolecular and multimolecular colloids.
28. Explain the following with uses
 - (a) Paper chromatography
 - (b) Thin layer chromatography.
29. Explain the principle and advantages of Gas Chromatography.
30. Explain the term chromophore, chromogen, and auxochrome. What is meant by deepening of colour in dye chemistry?
31. Write a short note on azo-dyes.
32. Discuss briefly the relationship between colour of organic compounds and their constitution. Explain on the basis of :
 - (a) Resonance theory
 - (b) Molecular orbital theory.

33. What is isoprene rule? How does it help in establishing a skeleton of a terpenoid?
34. How is Hofmann exhaustive methylation method for the degradation of alkaloids?
35. Draw the structure of Coniine. Comment on its physiological action.
36. Formulate the synthesis of two commercially important Nylons.
37. Explain the different purification methods of Colloids.
38. Differentiate natural and synthetic polymer with Example.

(6 × 4 = 24 Marks)

SECTION – D

Long essay. Answer any **two** questions from the following. Each question carries **15** marks.

39. What are the important properties of Colloids? Explain.
40. What are the important applications of Adsorption?
41. What are the requisites of a true dye? How are they classified? Mention a few important members of each class.
42. How are terpenoids classified? Elucidate the structure of natural rubber?
43. What are Alkaloids? Describe the structure and physiological action of Morphine.
44. Discuss the preparation, structure and uses of the following industrially important polymers.
 - (a) Polyvinyl Chloride
 - (b) Polyvinyl Acetate and
 - (c) PMMA.

(2 × 15 = 30 Marks)