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Reg. No. : .....

Name : .....

Fifth Semester B.Sc. Degree Examination, December 2021

First Degree Programme under CBCSS

Chemistry

CH 1543 – ORGANIC CHEMISTRY II

(2018 & 2019 Admission)

Time : 3 Hours

Max. Marks : 80

SECTION – A

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

1. What is Jones reagent?
2. What is Tollen's reagent?
3. What will be the product formed when methyl magnesium bromide reacts with propanone followed by acidification?
4. Predict the carbonyl stretching frequency of salicylaldehyde.
5. Predict the total number of peaks in the ^1H NMR spectrum of acetone.
6. Who is the father of Green Chemistry?
7. What are chromophores?

8. How will you convert PhMgBr to PhCOOH?

9. Draw the structure of citric acid.

10. Complete the following reaction, $CH_3NH_2 + CHCl_3 \xrightarrow[\Delta]{alco.KOH}$.

(10 × 1 = 10 Marks)

SECTION – B

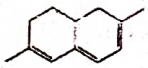
Short answer type. Answer any **eight** questions from the following. Each question carries **2** marks:

11. What is Clemmenson reduction?

12. What is Schiff's reagent test?

13. Phenol is acidic white ethanol is not. Why?

14. Calculate λ_{max} for the following compound.



15. Explain atom economy with a suitable example.

16. What is meant by hydrophobic interactions?

17. What is base peak in a mass spectrum?

18. Define bathochromic shift?

19. What is Nef's reaction?

20. What happen when a solution of benzenediazonium chloride is heated with cuprous chloride and HCl?

21. What are the synthetic applications of crown ethers?

22. What is Kolbe reaction?

23. What is Claisen rearrangement?

24. What is HVZ reaction?

25. Explain any one method for the preparation of anthranilic acid.

26. What are phase transfer catalysts?

(8 × 2 = 16 Marks)

SECTION – C

Short essay type. Answer any six questions from the following. Each question carries 4 marks:

27. Explain Luca's test.

28. Discuss the mechanism of benzoin condensation.

29. Explain spin-spin splitting.

30. Explain the advantages of microwave assisted organic synthesis.

31. Taking suitable examples compare the basicity of amines.

32. Explain the preparation and applications of benzene sulphonic acid.

33. How will you distinguish primary, secondary and tertiary amines? Explain.

34. Draw and explain the ^1H NMR spectrum of acetaldehyde.

35. Explain ziesel's method of estimation of methoxy group.

36. What is iodoform test? Explain.

37. Discuss about the nucleophilic addition reactions of aldehydes and ketones.

38. Explain with mechanism the conversion of amines to alkenes.

(6 × 4 = 24 Marks)

SECTION – D

Answer any two questions. Each question carries 15 marks.

39. Discuss the general methods for the preparation of aldehydes and ketones.

40. Explain

    (a) Beckmann rearrangement

    (b) MPV reduction

    (c) Preparation of coumarin

41. Explain

    (a) Chemical shift and factors affecting chemical shift.

    (b) Theory of mass spectrometry.

42. Discuss the twelve principles of green chemistry.

43. Explain

    (a) Acidity of phenols and its comparison with alcohols and carboxylic acids.

    (b) Synthesis and uses of saccharin.

44. Give an account on

    (a) Gabriel Phthalimide synthesis of amines.

    (b) Separation of mixture of amines.

    (c) Carbylamine reaction.

(2 × 15 = 30 Marks)
