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Reg. No. :

Name :

Fifth Semester B.Sc. Degree Examination, April 2024

First Degree Programme under CBCSS

Chemistry

Core Course – VII

CH 1543 : ORGANIC CHEMISTRY – II

(2020 Admission Onwards)

Special Examination

Time : 3 Hours

Max. Marks : 80

SECTION – A

Answer **all** questions.

Answer in **1** word to maximum of **2** sentences.

Each question carries **1** mark.

1. What is meant by homologous series? Give examples for homologous series in alcohols.
2. Explain biofuel.
3. Give one example for nucleophilic addition reaction on carbonyl compound.
4. Give any one use of tosyl group.
5. Explain nitro-aci tautomerism.

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6. What is meant by epimer? Give an example.
7. Draw the Haworth projection structure of D-glucose.
8. What is meant by active methylene groups?
9. Explain the mechanism of ultrasound synthesis.
10. Compare the efficiency of addition and substitution reactions in terms of atom economy.

(10 × 1 = 10 Marks)

SECTION – B

Answer **any eight** questions.

Each question carries **2** marks (Short answer type)

11. Explain hydroboration-oxidation reaction.
12. Is phenol or ethanol more acidic? Justify your answer.
13. How can acetophenone be distinguished from benzaldehyde?
14. Explain briefly the mechanism of HVZ reaction.
15. Briefly explain Gabriel's phthalimide reaction.
16. Draw the chair conformation of D-glucose.
17. Illustrate any one reaction of organo lithium compounds with carbonyl compounds.
18. Give any two synthetic applications of acetoacetic ester.
19. What are the various non-covalent interactions operating in supramolecular chemistry?



20. Explain the concept of molecular recognition.
21. Explain the role of water molecules in microwave assisted chemical synthesis.
22. Explain any two applications of supramolecular assemblies.

(8 × 2 = 16 Marks)

SECTION – C

Answer **any six** questions.

Each question carries **4** marks (Short essay type)

23. Explain the features and mechanism of Reimer-Tiemann reaction.
24. Illustrate Zeisel's method of methoxy group estimation.
25. Explain Baeyer-Villiger oxidation.
26. Briefly outline the mechanism of Cannizaro reaction.
27. What is Kolbe's electrolysis reaction? How is it useful in preparing compounds with even number of carbon atoms?
28. Explain any one method for the identification of 1^o, 2^o and 3^o amines.
29. Explain any three reactions that helped in identifying the side chain groups in glucose.
30. Illustrate mutarotation using glucose as an example.
31. Write notes on Organomagnesium compounds.

(6 × 4 = 24 Marks)



SECTION – D

Answer **any two** questions.

Each question carries **15** marks (essay type)

32. Write notes on :
- (a) Collin's reagent,
 - (b) Liebermann's nitroso reaction and
 - (c) Oxidative reactions of lead tetra acetate. **(3 × 5 = 15)**
33. Discuss the mechanism and features of Aldol and Knoevenegal rations. **(2 × 7.5 = 15)**
34. (a) Comment on the electrophilic substitution reactions of aniline. **5**
- (b) How is benzene diazonium chloride prepared? **2**
- (c) Comment on the synthetic applications of benzene diazonium chloride. **8**
35. (a) NaBH_4 is an excellent tool for functional group transformations. Justify the statement using suitable examples. **8**
- (b) Write notes on the principles of green chemistry. **7**

(2 × 15 = 30 Marks)

