

Reg. No. : .....

Name : .....



Fifth Semester B.Sc. Degree Examination, December 2023

First Degree Programme under CBCSS

Chemistry

Core Course VII

CH 1543 : ORGANIC CHEMISTRY II

(2020 Admission onwards)

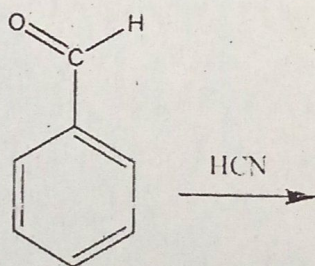
Time : 3 Hours

Max. Marks : 80

SECTION – A

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

1. Write any two properties of crown ethers.
2. Write notes on PCC.
3. Predict the products in the below reaction:



4. Give one method of preparation of carboxylic acid.



5. Explain carbylamine reaction.
6. Draw the structure of starch.
7. Give any two industrial applications of cellulose.
8. Give any one synthetic application of acetoacetic ester.
9. Explain atom economy.
10. According to green chemistry, What are the substitutes for solvents in chemical synthesis?

(10 × 1 = 10 Marks)

### SECTION – B

Answer any **eight** questions. **Each** question carries **2** marks (Short answer type)

11. How can phenol be prepared from cumene?
12. Explain Williamson's synthesis of esters.
13. Explain Oppenauer oxidation.
14. Discuss the synthetic utility of lactic acid.
15. What is the reason for nitro compounds to be used as explosives?
16. Illustrate mutarotation.
17. Give any two synthetic applications of  $S_eO_2$ .
18. Explain the mechanism of Reformatsky reaction.
19. Explain complementarity in supramolecular assemblies.
20. What is meant by pre-organization of host molecule?
21. Explain phase transfer catalysis.
22. Briefly explain the term 'acoustic cavitation'.

(8 × 2 = 16 Marks)



## SECTION – C

Answer any **six** questions. **Each** question carries **4** marks (Short essay type)

23. Explain pinacol-pinacolone rearrangement.
24. How can 1°, 2° and 3° alcohols be distinguished?
25. Explain the mechanism of benzoin condensation reaction.
26. Briefly outline the salient features of Perkin reaction.
27. Illustrate Fries rearrangement with an example.
28. How can Hoffmann's bromamide reaction help in step-down reactions?
29. Illustrate any three reactions that helped in identifying side-chain functional groups in fructose.
30. Write the synthetic applications of lithium dialkyl cuprates.
31. What is NBS? How is it useful for brominating substrates?

**(6 × 4 = 24 Marks)**

## SECTION – D

Answer any **two** questions. **Each** question carries **15** marks (essay type)

32. Explain:
  - (a) hydroboration – oxidation reaction and
  - (b) Reimer-Teimann reactions

**(2 × 7.5 = 15 Marks)**

33. (a) Illustrate the conversion of carbonyl compounds to alcohols using Grignard reagent. 5
- (b) Explain the mechanism of Beckmann rearrangement. 10



34. (a) Comment on the order of rate of hydrolysis of acid chlorides, esters, amides and acid anhydrides. 6
- (b) Explain the importance of tosyl groups in synthetic organic chemistry. 9
35. (a) Write notes on organo zinc compounds and their reaction towards compounds with active hydrogen.
- (b) Write notes on the principles of green chemistry. (2 x 7.5 = 15 Marks)

(2 x 15 = 30 Marks)

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