

D 10584

(Pages : 2)

Name.....

Reg. No.....

FIFTH SEMESTER U.G. DEGREE EXAMINATION, NOVEMBER 2021

(CBCSS—UG)

Chemistry

CHE 5B 07—ORGANIC CHEMISTRY—II

(2019 Admissions)

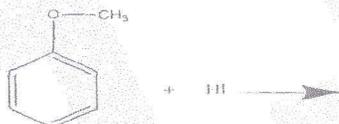
Time : Two Hours

Maximum : 60 Marks

Section A (Short Answers)

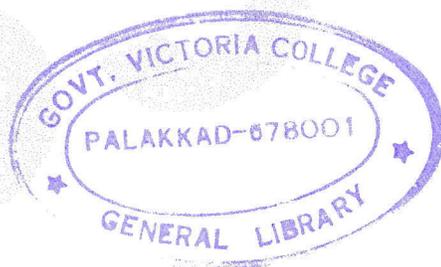
*Answer at least eight questions.**Each question carries 3 marks.**All questions can be attended.**Overall Ceiling 24.*

1. Which is more acidic, propanol or isopropanol ? Why ?
2. An alkoxide is a stronger base than hydroxide ion. Justify.
3. How will you convert phenol to salicylaldehyde ?
4. What is PTC ? Give examples.
5. Complete the reaction :



6. Suggest reactions for the conversion of ethyl magnesium chloride to 1-propanol.
7. What products are formed when CH_3MgI is treated with ethanol?
8. What is urotropine ? How it is prepared ?
9. What is Etard's reaction ?
10. Which is more acidic, acetic acid or chloroacetic acid ? Why ?
11. What is Hofmann's Bromamide degradation ? Explain with examples.
12. Pyridine undergoes nucleophilic substitution reaction easily. Why ?

(8 × 3 = 24 marks)



Turn over

Section B (Short Answers)

Answer at least **five** questions.

Each question carries 5 marks.

All questions can be attended.

Overall Ceiling 25.

13. How will you prepare phenolphthalein ? Explain its colour change with pH.
14. Explain oximercuriation-demercuration reaction for the preparation of alcohols.
15. What is Claisen rearrangement ? Explain its mechanism.
16. What is Tollen's reagent ? How it is used to test the presence of aldehydes ?
17. How will you convert acetic acid to acetaldehyde and acetic acid to acetone ?
18. What is Hofmann's elimination ? Explain with suitable examples.
19. Write notes on Fischer Indole synthesis.

(5 × 5 = 25 marks)

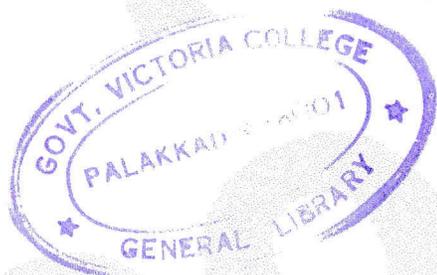
Section C (Essays)

Answer any **one** question.

The question carries 11 marks.

20. How will you separate a mixture of 1°, 2°, and 3° amines ?
21. Write notes on : Kolbe's electrolysis ; HVZ reaction ; Reformatsky reaction ; and Chichibabin reaction.

(1 × 11 = 11 marks)



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(Pages : 3)

Name.....

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FIFTH SEMESTER U.G. DEGREE EXAMINATION, NOVEMBER 2021

(CUCBCSS-UG)

Chemistry

CHE 5B 07—ORGANIC CHEMISTRY – II

Time : Three Hours

Maximum : 80 Marks

Part A

*Answer all questions.**Each question carries 1 mark.*

1. Reaction of potassium-t-butoxide with methyl iodide gives _____.
2. Structure of Pyridine is represented as _____.
3. Dibenzyl Ether reacts with Phenyl Li, followed by acid hydrolysis to form benzyl phenyl carbinol. This reaction is known as _____.
4. The number of structural isomers of alcohols with molecular formula C_3H_7OH is _____.
5. Luca's test is used to determine the type of _____.
6. Oxidation of alkenes with pertrifluoro acetic acid forms _____.
7. The appearance of Silver mirror in Tollen's test indicate the presence of _____.
8. Hinsberg reagent is _____.
9. Nitrobenzene when reduced with $Zn + NaOH$ gives _____.
10. Carbyl amine test is a diagnostic test for _____.

(10 × 1 = 10 marks)

Part B

*Answer any ten questions.**Each question carries 2 marks.*

1. Explain why an Alkyl halide is more reactive than Vinyl chloride.
2. How is methyl magnesium iodide is prepared? Give one use of Grignard reagent.
3. Explain why phenol is more acidic than ethyl alcohol.
4. Explain Claisen rearrangement with mechanism.
5. Give an account on the mechanism of aldol condensation.
6. Discuss the structure of Cabonylate anion.

Turn over

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7. How is oxalic acid prepared?
8. How do you account for acetyl chloride has lower boiling point than acetic acid?
9. Explain the role of inductive effect of alkyl group on the strength of basicity of amines.
10. How will you distinguish between 1°, 2° and 3° amines.
11. Explain the preparation methyl orange.
12. Write the mechanism of Claisen condensation.

(10 × 2 = 20 marks)

Part C

Answer any **five** questions.

Each question carries 6 marks.

1. Give the mechanism, stereochemistry and kinetics of SN¹ and SN² reactions for the hydrolysis of alkyl halide.
2. (a) Explain Riemer-Tiemann reaction.
(b) Write a note on Kolbe's reaction.
3. Discuss Wolff-Krishner reduction and MPV reduction.
4. (a) Explain HVZ reaction.
(b) Explain Blanc's rule.
5. Explain the properties of pyridine ; furan and indole.
6. (a) What is Zaytseff rule? Explain.
(b) Differentiate between substitution and Elimination reaction.
7. (a) Explain the uses and health effects of CCl₄.
(b) Explain the uses of Chloroform.
8. Discuss Canizarro reaction and explain probable mechanism in this reaction. What are the products when a mixture containing formaldehyde and benzaldehyde is subjected to this reaction?

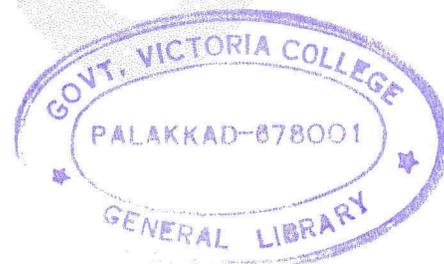
(5 × 6 = 30 marks)

Part D

Answer any **two** questions.

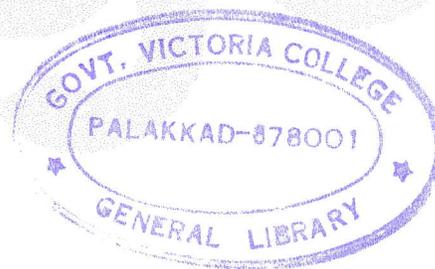
Each question carries 10 marks.

1. What is ring substitution in aromatic amines? Write the following ring substitution of aromatic amines :
(a) Halogenation ; (b) Sulphonation ; (c) Nitration.



2. (a) What is nitro air tautomerism?
(b) Write mechanism and stereochemistry of Hoffman elimination of amines.
(c) What happens when acetaldehyde treated with diluted NaOH?
3. (a) What is glacial acetic acid?
(b) How do you use benzene diazomum chloride to prepare (i) Phenel ; (ii) Bromobenzene ;
(iii) Diphenyl ; (iv) P-hydroxy a 30 benzene.
(c) Explain Beckmann rearrangement with mechanism.
4. (a) How is urea prepared? Discuss its important reactions.
(b) How is phenol manufactured for coaltar and how is it purified.
(c) Write a note on Perkin's reaction.

(2 × 10 = 20 marks)



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Time : Three Hours

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7. The appearance of Silver mirror in Tollen's test indicate the presence of _____.
8. Hinsberg reagent is _____.
9. Nitrobenzene when reduced with Zn + NaOH gives _____.
10. Carbyl amine test is a diagnostic test for _____.

(10 × 1 = 10 marks)

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1. Explain why an Alkyl halide is more reactive than Vinyl chloride.
2. How is methyl magnesium iodide is prepared? Give one use of Grignard reagent.
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Turn over

7. How is oxalic acid is prepared?
8. How do you account for acetyl chloride has lower boiling point than acetic acid?
9. Explain the role of inductive effect of alkyl group on the strength of basicity of amines.
10. How will you distinguish between 1°, 2° and 3° amines.
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4. (a) How is urea prepared? Discuss its important reactions.
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(2 × 10 = 20 marks)

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FIFTH SEMESTER U.G. DEGREE EXAMINATION, NOVEMBER 2021

(CBCSS—UG)

Chemistry

CHE 5B 07—ORGANIC CHEMISTRY—II

(2019 Admissions)

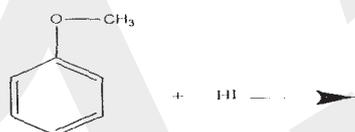
Time : Two Hours

Maximum : 60 Marks

Section A (Short Answers)

*Answer at least eight questions.**Each question carries 3 marks.**All questions can be attended.**Overall Ceiling 24.*

- Which is more acidic, propanol or isopropanol ? Why ?
- An alkoxide is a stronger base than hydroxide ion. Justify.
- How will you convert phenol to salicylaldehyde ?
- What is PTC ? Give examples.
- Complete the reaction :



- Suggest reactions for the conversion of ethyl magnesium chloride to 1-propanol.
- What products are formed when CH_3MgI is treated with ethanol?
- What is urotropine ? How it is prepared ?
- What is Etard's reaction ?
- Which is more acidic, acetic acid or chloroacetic acid ? Why ?
- What is Hofmann's Bromamide degradation ? Explain with examples.
- Pyridine undergoes nucleophilic substitution reaction easily. Why ?

(8 × 3 = 24 marks)

Turn over

Section B (Short Answers)

Answer at least **five** questions.

Each question carries 5 marks.

All questions can be attended.

Overall Ceiling 25.

13. How will you prepare phenolphthalein ? Explain its colour change with pH.
14. Explain oximercuriation-demercuration reaction for the preparation of alcohols.
15. What is Claisen rearrangement ? Explain its mechanism.
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Answer any **one** question.

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21. Write notes on : Kolbe's electrolysis ; HVZ reaction ; Reformatsky reaction ; and Chichibabin reaction.

(1 × 11 = 11 marks)

D 30494

(Pages : 2)

Name.....

Reg. No.....

**FIFTH SEMESTER (CBCSS—UG) DEGREE EXAMINATION
NOVEMBER 2022**

Chemistry

CHE 5B 07—ORGANIC CHEMISTRY-II

(2019 Admission onwards)

Time : Two Hours

Maximum : 60 Marks

Section A (Short Answers)*Answer questions up to 20 marks.**Each question carries 2 marks.*

- The boiling points of alcohols are much higher than the corresponding aliphatic hydrocarbons. Why ?
- What is PCC ? Name the molecule formed when $\text{CH}_3\text{-CH}_2\text{-CH}_2\text{-OH}$ is treated with PCC ?
- What are crown ethers ? Give two examples.
- Name the product formed for the following reaction

$$\text{CH}_3\text{MgBr} + \text{CO}_2 \xrightarrow{\text{H}_2\text{O}/\text{H}^+}$$
- What are Frankland's reagents ? How are they prepared ?
- Suggest a suitable reagent for the following conversion
Benzoyl chloride \longrightarrow Benzaldehyde
- How will you convert toluene to benzaldehyde ?
- Which among the following is a stronger acid, p-nitrobenzoic acid or benzoic acid ? Why ?
- How will you convert acetic acid to propanoic acid ?
- $\text{CH}_3\text{-CH}_2\text{-NO}_2$ reacts with NaOH. Why ?
- How will you convert benzoic acid to aniline ?
- Pyridine is less basic than aliphatic amines. Why ?

(Ceiling of marks : 20)

Turn over

Section B (Short Answers)

Answer questions up to 30 marks.

Each question carries 5 marks.

13. How would you distinguish between 1°, 2° and 3° alcohols ?
14. What is Williamson's synthesis ? How will you prepare anisole and phenetole using Williamson's synthesis ?
15. What is Reformatsky reaction ? What is its synthetic use ?
16. How will you distinguish pentan-2-one and pentan-3-one ?
17. Suggest a suitable reaction for the preparation of α halo acid. Explain using examples.
18. How will you prepare amines using Gabriel's phthalimide synthesis ?
19. Starting from ethylacetoacetate, how will you prepare succinic acid ?

(Ceiling of marks : 30)

Section C (Essay)

*Answer any **one** question.*

The question carries 10 marks.

20. a) Explain the mechanism of pinacol-pinacolone rearrangement.
b) Discuss the mechanism of bromination and nitration of phenol.

21. Write notes on :

Aldol condensation

Cannizzaro reaction

Benzoin condensation

Perkin's reaction.

(1 × 10 = 10 marks)