

18U512

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Name: .....

Reg. No.....

**FIFTH SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2020**

(CUCBCSS-UG)

(Regular/Supplementary/Improvement)

**CC15U CHE5 B07 - ORGANIC CHEMISTRY - II**

(Chemistry - Core Course)

(2015 Admission onwards)

Time: Three Hours

Maximum: 80 Marks

**SECTION A**

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

1. Aniline on benzylation gives .....
2. Structural formula of acetoacetic ester is .....
3. Primary alkyl halides generally undergo elimination by ..... Mechanism.
4. .... is also known as carbamide.
5. On heating phthalic acid gives .....
6. IUPAC name of oxalic acid is .....
7. Dry distillation of calcium acetate yields .....
8.  $\text{CH}_3\text{-CH}_2\text{-CH}_2\text{-CHO}$  on treatment with  $\text{KMnO}_4$  in acidic medium yields .....
9. Hydroboration oxidation of propene gives .....
10. .... compounds are called Frankland reagents.

**(10 x 1 = 10 Marks)**

**SECTION B**

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

11. Explain Williamson's synthesis with example.
12. How can aniline be converted to bromobenzene?
13. Illustrate Reformatsky reaction.
14. Explain how benzene is converted to acetophenone.
15. How can phenol be converted to salicylaldehyde?
16. Compare the acidity of phenol and p-nitro phenol. Explain the reason.
17. Write any two applications of crown ethers.
18. How can benzaldehyde be converted to toluene?
19. Discuss the mechanism of Kolbe's electrolysis.
20. What is a reactive methylene group? Give one example.
21. Give one method of preparation of eosin.

22. Illustrate diazotization with one example.

(10 x 2 = 20 Marks)

### SECTION C

Answer any *five* questions. Each question carries 6 marks.

23. Discuss the mechanism of (a) Aldol condensation (b) Cannizzaro reaction
24. What is Pinacol-pinacolone rearrangement? Explain with an example.
25. Which is the major product obtained when 2-chloro-2-methyl butane undergoes dehydrohalogenation? Explain why?
26. Explain the Zeisel's method of estimation of methoxy groups.
27. Compare the relative acidities of phenols and carboxylic acids.
28. Write one method of preparation of methyl orange? Explain the reason for the colour change exhibited by methyl orange with change in pH.
29. Write a method each for preparations of (a) furan (b) indole? Write a note on basicity of pyridine.
30. Discuss the mechanism and stereochemistry of  $S_N2$  reaction.

(5 x 6 = 30 Marks)

### SECTION D

Answer any *two* questions. Each question carries 10 marks.

31. Discuss the addition-elimination and elimination-addition mechanism. Give the evidences in support of the mechanisms.
32. Discuss any four of the following:
  - (a) Perkin reaction
  - (b) Knoevenagel reaction
  - (c) Benzoin condensation
  - (d) Iodoform test
  - (e) Beckmann rearrangement
33. Discuss the effect of substituents on the acidity of aliphatic and aromatic carboxylic acids.
34. Discuss the structure of pyridine and comment on its electrophilic and nucleophilic reactions.

(2 x 10 = 20 Marks)

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