



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – CHEMISTRY

FIFTH SEMESTER – NOVEMBER 2014

CH 5505 - ORGANIC FUNCTIONAL GROUPS - II

Date : 30/10/2014

Dept. No.

Max. : 100 Marks

Time : 09:00-12:00

SECTION – A

Answer ALL the questions:

(10 x 2 = 20)

1. How is sulpha-phyridine prepared?
2. Nitro methane is soluble in NaOH solution while nitro benzene does not. Explain.
3. What is racemisation?
4. Write the Fischer projection formula of D glyceraldehydes and L lacti acid.
5. What do you mean by active methylene compound? Give an example.
6. What are sigmatropic rearrangements? Give an example.
7. Write the mechanism of benzilic acid rearrangement.
8. What are alkaloids? Give the structure of piperine.
9. State the isoprene rule.
10. Which is more aromatic, furan or thiophene? How?

SECTION – B

Answer any EIGHT questions:

(8 x 5 = 40 marks)

11. Explain the various reduction reactions of nitro benzene.
12. Arrange the following amines in increasing order of basicity and give reasons for your answer: ammonia, methyl amine, benzyl amine and aniline.
13. How do you differentiate primary, secondary and tertiary amines?
14. What is atropisomerism? Explain the optical activity of biphenyl compounds.
15. What is resolution? Explain any two methods of resolution.
16. How is ethyl acetoacetate prepared? How is it used for the synthesis of succinic acid?
17. Write any five synthetic applications of diazo acetic ester.
18. E and Z isomers of acetophenone oxime give different amides by Beckmann rearrangement. Explain.
19. Fries rearrangement intramolecular rearrangement. Justify the statement.
20. Write a note on i) Chichibabin reaction ii) Ziegler alkylation.
21. How are the following synthesized from acetylene? i) pyridine, ii) thiophene.
22. How is the structure of coniine elucidated?

SECTION – C

Answer any FOUR questions:
marks)

(4 x 10 = 40

23. Write short notes on i) Diazotisation reaction, ii) Gabriel's phthalimide synthesis iii) Gattermann reaction.
24. a) Explain partial and absolute asymmetric syntheses with suitable examples.
b) Differentiate enantiomers from diastereoisomers.

(5+5)

25. How is diazomethane prepared? From diazomethane, how do you synthesis the following compounds?
(i) methyl acetate ii) pyrazole iii) propionic acid
26. a) What is migratory aptitude? Explain it in pinacol-pinacolone rearrangement.
b) Write a note on i) Para Claisen rearrangement ii) Cope rearrangement (5+5)
27. a) Discuss synthesis and electrophilic substitution reaction of quinoline.
b) What are the oxidation products of quinoline and isoquinoline? (5+5)
28. a) Explain coupling reactions by diago compounds.
b) Write the total synthesis of nicotine. (5+5)

\$\$\$\$\$\$