



**LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034**

**B.Sc. DEGREE EXAMINATION – CHEMISTRY**

**FIFTH SEMESTER – APRIL 2016**

**CH 5510 – ORGANO-NITROGEN COMPOUNDS & STEREOCHEMISTRY**

Date: 26-04-2016

Dept. No.

Max. : 100 Marks

Time: 09:00-12:00

**PART-A**

**Answer ALL the questions. Each question carries TWO marks**

**(10 x 2 =20 marks)**

1. How is aniline prepared?
2. Write the preparation of D-dinitrobenzene.
3. Give the biological functions of piperine.
4. Define isoprene rule.
5. What are conformers?
6. Draw the cis and trans forms of 1,3 dimethylcyclohexane.
7. Define optical activity.
8. Write the R and S configurations of glyceraldehyde.
9. Give an example for intermolecular rearrangement.
10. What is oxycope rearrangement?

**PART-B**

**Answer any EIGHT questions. Each question carries FIVE marks**

**(8 x 5 =40 marks)**

11. What products are obtained by reduction of nitrobenzene under different conditions?
12. How will you synthesis phenol from nitrobenzene?
13. Explain the mechanism of Gomberg reaction.
14. How is thiophene synthesized? Discuss any two of its important chemical properties.
15. Explain the structure and functions of camphor.
16. Explain general method of determining alkaloids.
17. Discuss the conformational analysis of n-butane.
18. Write short note on E-Z notations.
19. Describe absolute asymmetric synthesis with an example.
20. Describe Fischer, sawhorse and Newmann projections of 2,3-dibronopentane.
21. Discuss the conversion of pinacol to pinacolone.
22. Write the mechanism for the conversion of benzamide to aniline.

**PART-C**

Answer any **FOUR** questions. Each question carries ten marks:

(4 x 10 =40 marks)

23. (a) How will you distinguish between primary, secondary and tertiary amines?  
(b) Discuss any two synthetic applications of benzene diazonium chloride.
24. (a) How do substituents affect the basicity of aromatic amines.  
(b) Discuss the electrophilic substitution of pyridine.
25. Write short notes on:  
(a) Skraup synthesis of quinoline.  
(b) Bischler-Napieralski synthesis.
26. (a) Distinguish between maleic and fumaric acids.  
(b) Discuss about the conformers of dimethylcyclohexane with potential energy diagrams.
27. (a) Explain the resolution by mechanical and biochemical methods.  
(b) Write short note on optical isomers of substituted spiranes.
28. Write the mechanism for the following rearrangements:  
(a) Beckmann      (b) Claisen.