



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – CHEMISTRY

FIFTH SEMESTER – APRIL 2017

CH 5510- ORGANO-NITROGEN COMPOUNDS & STEREOCHEMISTRY

Date: 22-04-2017
Time: 01:00-04:00

Dept. No.

Max. : 100 Marks

PART- A

Answer ALL questions

10 x 2 = 20 Marks

1. What is diazotisation?
2. Give the IUPAC name of
 - (i). $\text{CH}_3\text{NHCH}_2\text{CH}_2\text{COOH}$
 - (ii). $(\text{CH}_3)_2\text{NCH}_2\text{CH}(\text{CH}_3)\text{CH}_2\text{CH}_2\text{OH}$
3. How will you prepare pyrrole from ammonium mucate?
4. State isoprene and special isoprene rule.
5. What do you mean by dihedral angle?
6. Write E and Z isomers of $\text{CCl Br} = \text{CHC}_2\text{H}_5$.
7. What do you mean by racemization?
8. State Walden inversion.
9. What is Cope rearrangement?
10. Cite an example for cationic rearrangement.

PART- B

Answer any EIGHT questions

8x5 = 40 marks

11. Distinguish 1° , 2° , 3° amines by Hinsberg test.
12. Discuss the reduction reaction of nitrobenzene.
13. (i) How will you prepare quinoline by Skraup synthesis?
(ii) How does quinoline react with alkaline KMnO_4 ?
14. Elucidate the structure of nicotine.
15. What are alkaloids? How will you extract it from plants?
16. Discuss the various conformations of ethane suggested by Sawhorse and Newman projections.
17. Describe the methods of distinguishing geometrical isomers.
18. Write notes on Asymmetric synthesis.
19. Explain the optical activity of allenes.
20. What do you mean by erythro and threo isomers? Explain with an example.
21. Enumerate the mechanism involved in the conversion of phenyl acetate into hydroxyacetophenone.
22. What is pinacol – pinacolone rearrangement? Explain with mechanism.

23. Write notes on (i) Carbylamine reaction

(ii) Hoffmann degradation

(iii) Gabriel phthalimide synthesis

(iv) Sandmeyer's reaction

24. (i) "Electrophilic substitution of pyridine occurs at C-3 but nucleophilic substitution at C-2". Explain with examples .

(ii) Make following conversions

a. Furan to Furoic acid

b. Isoquinoline into 1- amino quinoline

25.(i) Discuss the effect of substituents on the basicity of aromatic amines.

(ii) Describe the structure and functions of Citral.

26. Explain the mechanism of (i) Curtius rearrangement

(ii) Benzilic acid rearrangement

27.Explain the conformation analysis of disubstituted cyclohexane.

28. Write notes on chemical and bio chemical methods for the resolution of racemic mixture.
