STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI-86
(For candidates admitted during the academic year 2004 –05 & thereafter)

SUBJECT CODE: CH/MC/OC54

B.Sc. DEGREE EXAMINATION, NOVEMBER 2008
BRANCH IV- CHEMISTRY
FIFTH SEMESTER

REG.NO ……..

COURSE : MAJOR CORE
PAPER : ORGANIC CHEMISTRY-II
TIME : 30 MINUTES **MAX.MARKS : 30**

SECTION – A **(30x1=30)**
ANSWER ON THE QUESTION PAPER ITSELF.

Answer all the questions.

I Choose the correct answer: **(10x1=10)**

1. Furan on treatment with HCN / HCl forms _____.
   a) Furfural b) 2-nitro furan c) 2-cyano furan d) 2-methyl furan

2. Azulene has _____ π electrons.
   a) 8 b) 10 c) 6 d) 12

3. P-rosaniline is a _____ dye
   a) Azo b) direct c) triphenylmethane d) phthalein

4. O-Nitrophenol can be steam distilled because of its _____.
   a) Intramolecular H-bonding b) Vanderwalls force
   c) Intermolecular H-bonding d) London's force

5. Aniline on reaction with nitrous acid forms _____
   a) Benzene b) benzene diazonium chloride
   c) phenol d) benzanilide

6. The basicity of amines is in the order of
   a) $(CH_3)_2NH > CH_3NH_2 > (CH_3)_3N > NH_3$
   b) $(CH_3)_3N > (CH_3)_2NH_2 > CH_3NH_2 > NH_3$
   c) $NH_3 > CH_3NH_2 > (CH_3)_2NH_2 > (CH_3)_3N$
   d) $(CH_3)_2NH > CH_3NH_2 > NH_3 > (CH_3)_3N$

7. α – aminoacids with substituted groups form _____ colour with Ninhydrin.
   a) Purple b) Yellow c) Red d) Blue

8. Cis-1-1-dimethyl cyclohexane has methyl groups at
   a) ae b) aa c) ee d) none of the above

9. Sanger's reagent is
   a) 2, 4 - dinitro fluoro benzene b) 2, 4 – dichloro fluoro benzene
   c) 2, 4 – difluoro nitro benzene d) 2, 4 – dinitro chloro benzene

10. The conformation of butane with the dihedral angle, $\theta = 60^o$ is called as
a) skew b) eclipsed c) gauche d) anti

II State true or false. (5x1=5)

11. Pyridine is more basic than pyrrole.
12. [18] Annulene is aromatic.
13. The C-terminal of an amino acid is identified by Edman degradation.
14. Nitration of thiophene forms 3-nitro thio phene as the major product.
15. Leucine is an optically inactive amino acid.

III Fill in the blanks: (5x1=5)

16. The Zwitter ionic form of glycine is _____.
17. The structure of [14] Annulene is _____.
18. The unstable conformation of cyclohexane is _____.
19. An example for acidic mordant is _____.
20. Pyridine on halogenations forms_____

IV. Match the following: (5x1=5)

21.	Diethyl oxalate	-	carbylamine reaction
22.	ethyl amine to ethyl isocyanide	-	separation of amines
23.	Sandmeyer reaction	-	isoelectric point
24.	NaOH	-	$C_6H_5N_2Cl$ to C_6H_5Cl
25.	Electrophoresis	-	mordant

V Answer in one or two sentences: (5x1=5)

26. What is Isoelectric point?

27. Define chromophore with an example.

28. Draw the structure of Indole.

29. Convert methylamine to ethylamine.

30. Give any one method of preparation of diethylamine.

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SECTION – B **(5x6=30)**

ANSWER ANY FIVE QUESTIONS

1. Explain the reduction of nitrobenzene under different conditions.
2. How is Hinberg's method useful for the separation of animes?
3. Convert benzene diazonium chloride to the following:
   (a) Phenol (b) Benzene (c) diphenyl
   d) Stilbene e) p-hydroxyazobenzene
4. Explain all the steps involved in the preparation of alanyl glycine.
5. Haw is Isoquinoline prepared by Bischler Napieralsky synthesis?
6. Describe the conformational isomers of n-butane with the potential energy diagram.
7. How are the following prepared
   a) Malachite green b) Phenolphthalein

SECTION – C **(2x20=40)**

ANSWER ANY TWO QUESTIONS

8. a) An aromatic compound A $(C_6H_5O_2N)$ when reduced with Fe/HCl gave compound B(C_6H_7N) which on diazotisation gave compound C which on boiling with acidified water gave 'D' (C_6H_6O). 'D' in alkaline medium reacts with CO_2 to form 'E' $(C_7H_6O_3)$. E on heating with soda-lime gives back 'D'. With explanations and equations identify the compounds A to E.
   b) What is the major product obtained by the nitration of amiline? Explain the mechanism. (10+10)

9. a) Explain the preparation and constitution of quinoline. (6+9)

   b) Discuss the structure of hemoglobin. (5)

10. a) Describe the classification of dyes based on their mode of application with examples. What is Azulene? (7+3)

    b) Explain the stability of cycloalkenes using Bayer's theory. (10)

11. a) Explain the primary and secondary structure of proteins. (6+9)

    b) How does HNO_2 react with primary, secondary tertiary nitroalkane? (5)