

STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI-86  
(For candidates admitted during the academic year 2011 – 12 & thereafter)

SUBJECT CODE: 11CH/MC/OC54

B.Sc. DEGREE EXAMINATION, NOVEMBER 2015  
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)

- Reduction of alkyl nitrite with Sn/HCl form \_\_\_\_\_  
a) Alcohol      b) Amine      c) Acid      d) Salt
- Nitrobenzene on reduction with Zn/NH<sub>4</sub>Cl form \_\_\_\_\_  
a) Aniline      b) Phenylhydroxylamine      c) Azobenzene      d) Hydrazobenzene
- Primary amine from carbylamines by reaction with \_\_\_\_\_  
a) CHCl<sub>3</sub> and alc. KOH      b) CCl<sub>4</sub> and alc. KOH  
c) CH<sub>2</sub>Cl<sub>2</sub> and alc. KOH      d) Sn/HCl
- Pyridine on nitration form \_\_\_\_\_  
a) o – nitropyridine      b) m – nitropyridine      c) p – nitropyridine      d) Both a and b
- Methyl orange is an example of  
a) Cationic dye      b) anionic dye      c) mordent dye      d) azo dye
- 1° nitroalkane on catalytic reduction with H<sub>2</sub>/Ni form \_\_\_\_\_  
a) 1° amine      b) 2° amine      c) 3° amine      d) hydroxylamine
- Nitrobenzene form hydrazobenzene in the presence of \_\_\_\_\_  
a) Zn/NH<sub>4</sub>OH      b) Zn/NaOH      c) Zn/NH<sub>4</sub>Cl      d) H<sub>2</sub>/Ni
- \_\_\_\_\_ is used as a solvent in Friedel crafts reaction.  
a) Methanol      b) ethanol      c) nitrobenzene      d) DMC
- The order of reactivity in the following is  
a) pyrrole > furan > thiophene > benzene  
b) pyrrole < furan > thiophene < benzene  
c) pyrrole < furan < thiophene > benzene  
d) pyrrole > furan < thiophene < benzene
- Pyridine on reduction with Ni form \_\_\_\_\_  
a) Piperidine      b) pyrrole      c) purine      d) phenol

**II Fill in the blanks:**

11. Aniline on treatment with  $\text{NaNO}_2$  and  $\text{HCl}$  form \_\_\_\_\_.
12. Tetracycline is an example of \_\_\_\_\_.
13. Indigo is an example of \_\_\_\_\_ dye.
14. Chlorophyll contains \_\_\_\_\_ ring structure.
15. Nitroalkanes form \_\_\_\_\_ on treatment with  $\text{HNO}_2$ .
16. Position \_\_\_\_\_ is more reactive in pyrrole.
17. \_\_\_\_\_ is the only heterocyclic compound that undergoes Diels Alder reaction.
18. Phthalic anhydride with catechol forms \_\_\_\_\_.
19. Enol form of Isatin is \_\_\_\_\_.
20. Structure of LSD is \_\_\_\_\_.

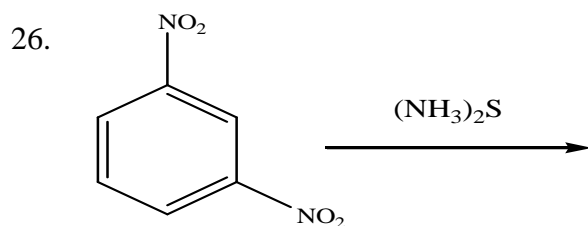
**III Match the following:**

(5x1=5)

- |                      |   |                                |
|----------------------|---|--------------------------------|
| 21. Chloromycetin    | - | Anti malarials                 |
| 22. Quinine          | - | Bischler Napieralsky synthesis |
| 23. Isoquinoline     | - | Antibiotics                    |
| 24. Aniline          | - | Bacillary dysentery            |
| 25. Sulpha guanidine | - | Liebermann's test              |

**IV Answer in a line or two:**

(5x1=5)



27. How is phenol prepared from  $\text{C}_6\text{H}_5\text{N}_2\text{Cl}$ ?
28. What is Hinsberg reagent?
29. Draw the structure of chlorophyll.
30. Give the structure of crystal violet.

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**TIME : 2½ Hours**

**MAX.MARKS : 70**

**SECTION – B**  
**ANSWER ANY FIVE QUESTIONS**

**(5x6=30)**

1. Explain the mechanism of nitration of nitrobenzene.
2. Discuss the following
  - a) Aniline is less basic than N-methyl aniline
  - b) Diphenylamine is a much weaker base than aniline
3. Describe the mechanism of coupling reaction of benzene diazonium chloride with tertiary amine.
4. Explain the preparation of quinoline by Skraup's synthesis.
5. How are the following prepared.
  - a) Methyl orange
  - b) Indigo
6. Discuss any one preparation and therapeutic use of sulphadiazine.
7. Write a short note on the classification of dyes based on chemical structure.

**SECTION – C**  
**ANSWER ANY TWO QUESTIONS**

**(2x20=40)**

8. a) How is the separation of mixture of amines carried out by Hinsberg and Hoffman method? Explain.  
b) Explain the mechanism of
  - i. Beckmann rearrangement
  - ii. Hoffmann rearrangement

**(12 + 8)**
9. a) Discuss any one electrophilic substitution reaction of furan with mechanism.  
b) Write a short note on replacement reactions of benzene diazonium chloride.
10. Discuss the preparation of the following
  - a) Malachite green
  - b) Phenolphthalein
  - c) Aspirin
  - d) Sulpha guanidine

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