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Total No. of Questions: [09]

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**B.Sc. (Hons.) Chemistry (Semester – 4<sup>th</sup>)**  
**ORGANIC CHEMISTRY-III**  
**Subject Code: BCHMS1-402**  
**Paper ID: 19131624**

**Time: 03 Hours**

**Maximum Marks: 60**

**Instruction for candidates:**

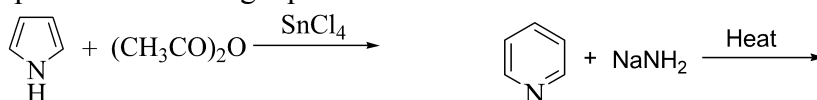
1. Section A is compulsory. It consists of 10 parts of two marks each.
2. Section B consist of 5 questions of 5 marks each. The student has to attempt any 4 questions out of it.
3. Section C consist of 3 questions of 10 marks each. The student has to attempt any 2 questions.

**Section – A**

**(2 marks each)**

Q1. Attempt the following:

- a) Write a short note on Fischer Indole synthesis.
- b) Show which one between pyridine and pyrrole is more basic and why?
- c) What do you understand by Hofmann's exhaustive methylation?
- d) Complete the following equations



- e) How will you convert furoic acid into furan?
- f) Explain the isoprene rule with suitable example.
- g) Give medicinal importance of Cocaine and morphine.
- h) Define the term terpene and name four members of this class of natural products.
- i) Explain the effect of solvent on the basicity of amines.
- j) Write a short note on Emde's degradation of alkaloids

**Section – B**

**(5 marks each)**

- Q2. Give Skraup's synthesis of quinoline.
- Q3. Discuss the synthesis of  $\alpha$ -terpineol.
- Q4. Write general methods of structural elucidation of quinoline and isoquinoline.
- Q5. How will you Distinct between 1°, 2° and 3° amines with Hinsberg reagent and nitrous acid.
- Q6. Give Hantzsch synthesis of pyridine derivatives.

**Section – C**

**(10 marks each)**

- Q7. Write preparation and structure elucidation of naphthalene and anthracene
- Q8. Discuss the structure elucidation and synthesis of nicotine along with their medical applications.
- Q9. Discuss the synthesis, reactions, and mechanism of substitution reactions of Furan and Thiophene. Also, justify the position of substitutions in each case with appropriate reason.