

B.Sc. S.Y. (Part-II) (CBCS Pattern) Sem-IV  
**USCCHT08 - Chemistry Paper-II -Organic Chemistry**

P. Pages : 2

Time : Three Hours



**GUG/W/23/12001 (S)**

Max. Marks : 50

- Notes : 1. All **five** questions are compulsory and carry equal marks.  
2. Give diagrams and give chemical equations wherever necessary.

1. A) How will you separate primary, secondary and tertiary amines by Hoffmann's method? **5**  
B) Discuss reduction of nitrobenzene under different conditions. **5**  
i) Acidic medium ii) Alkaline medium

**OR**

- C) Explain basicity of amines. **2½**  
D) Give preparation and uses of Picric Acid. **2½**  
E) What is coupling reaction? Explain with the help of any one example. **2½**  
F) Explain – Hoffmann Bromide reaction. **2½**  
2. A) What are organometallic compounds? How will you convert Dry Ice into Acetic acid by Grignard reagent? **5**  
B) Discuss Molecular Orbital Structure of Pyridine in detail. **5**

**OR**

- C) Discuss Basicity of Pyrrole and Pyridine. **2½**  
D) Write short notes on Sulphur Ylides. **2½**  
E) What happens when diethyl zinc reacted with acetyl chloride? **2½**  
F) Explain electrophilic substitution reaction in Quinoline. **2½**  
3. A) An Organic compound containing C, H, O, gives 40% C, 6.66% H on analysis. Its vapour density is 30. Calculate its empirical and molecular formula. **5**  
B) Write short notes on – **5**  
i) Electrophoresis ii) Iso-electric point

**OR**

- C) Explain principle and calculation involved estimation of carbon in Liebig's method. **2½**  
D) How will you prepare primary amines by Gabriel's Phthalimide reaction? **2½**

- E) What are proteins? How are they classified on the basis of structure? 2½
- F) Explain Merrifield solid phase synthesis. 2½
4. A) Discuss Otto Witt's theory of colour and chemical constitution of dyes. 5
- B) Explain following questions in brief- 5
- i) What are carbohydrates? Give its classification.
- ii) Explain synthesis of Aspirin with its uses.

**OR**

- C) Explain open chain structure of Glucose. 2½
- D) Give synthesis and uses of Congo red. 2½
- E) What are antibiotics? Give its classification. 2½
- F) Write preparation and uses of Phenolphthalein. 2½
5. Attempt **Any Ten**.
- 1) What are nitroalkanes? 1
- 2) What is Heisenberg's reagent? 1
- 3) What is diazonium salt? 1
- 4) What is LDA? 1
- 5) Define Condense heterocyclic compound with example. 1
- 6) Draw the structure of Ferrocene. 1
- 7) Define Zwitter ion with example. 1
- 8) What is peptide linkage in protein? 1
- 9) Give the structural formula of  $\alpha$ -amino acid. 1
- 10) Give the structural formula of Fructose. 1
- 11) Draw structure of Indigo dye. 1
- 12) Define Narcotic drugs with example. 1

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