

B.Sc. - I (CBCS Pattern) Sem-II  
**USCCHT03 - Chemistry Paper-I (Organic Chemistry)**

P. Pages : 2

Time : Three Hours



**GUG/W/23/11574 (S)**

Max. Marks : 50

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1. a) Discuss the mechanism of  $SN^2$  reaction with energy profile diagram. **5**
- b) Write note on following synthesis of chlorobenzene: **5**
- i) Gattermann reactions.                      ii) Sandmeyer's reactions.

**OR**

- c) What is elimination reaction? Explain the mechanism of unimolecular elimination reactions. **2½**
- d) How will you prepare chlorobenzene from Benzene diazonium chloride salt? **2½**
- e) What happens when bromobenzene react with  $KNH_2$  in presence of liquid  $NH_3$ . **2½**
- f) Write short note on Williamson's ether synthesis. **2½**
2. a) How will you prepare primary secondary and Tertiary alcohol by using Grignard reagent? **5**
- b) Discuss the reaction and mechanism of Pinacol-Pinacolone rearrangement. **5**

**OR**

- c) How ether react with HI in hot condition? **2½**
- d) Write a note on Fries Rearrangement. **2½**
- e) Explain – Acidic nature of phenol. **2½**
- f) Write a note on Reimer – Tiemann reaction. **2½**
3. a) How will you prepare benzaldehyde via **5**
- i) Rosenmund reduction.                      ii) Gattermann Koch reaction.
- b) What is Perkin reaction? Explain mechanism with suitable example. **5**

**OR**

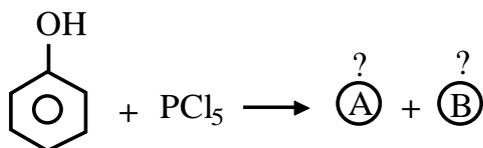
- c) Explain Benzoin condensation. **2½**
- d) Write a note on Wittig reaction. **2½**
- e) Explain nucleophilic addition of HCN to acetaldehyde. **2½**
- f) How benzophenone are prepared by Friedel Craft reaction. **2½**

4. a) Write a note on: 5  
 i) Reformatsky reaction. ii) Perkin condensation.  
 b) Define Esterification? Explain the mechanism of alkaline hydrolysis of Ether. 5

**OR**

- c) What is the action of heat on phthalic acid. 2½  
 d) Write a short notes on acidity of carboxylic acid. 2½  
 e) How will you prepare urea from phosgene. 2½  
 f) Explain the structure of acid chloride. 2½
5. Attempt **any ten**. **1x10=10**

- 1) Complete the following reaction



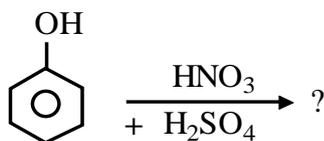
- 2) Draw energy profile diagram of  $\text{SN}^1$  reaction.

- 3) Define  $\text{E}_2$  reaction.

- 4) What is Lucas reagent?

- 5) What is ether?

- 6) Complete the following reactions



- 7) Explain Clemmensen reduction.

- 8) What is the action of  $\text{NH}_3$  on formaldehyde.

- 9) What is difference between aldehyde and ketones?

- 10) What is action of heat on succinic acid.

- 11) What happens when soda lime heated with carboxylic acid?

- 12) Complete the following reaction  $\text{RCONH}_2 + \text{H}_2\text{O} \rightarrow ? + ?$

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