

CHEMISTRY PAPER-X

(Organic Chemistry-A)

Time Allowed : 3 Hours

Max. Marks : 22

Note : (i) Attempt five questions in all, selecting at least one question from each Section. (ii) Question No. 9 (Section-E) is compulsory. (iii) All questions carry equal marks.

SECTION-A

- (a) Explain why allyl halides are more reactive than alkyl halides in S_N^1 reactions. 2
(b) Write a short note on Elimination Addition mechanism for nucleophilic substitution reactions of aryl halides. 2
- (a) Give the differences between S_N^1 and S_N^2 reactions of alkyl halides. 2
(b) What happens when :
 - Chloroform is exposed to air and sunlight
 - Carbon tetrachloride is boiled with alcoholic potassium hydroxide ?2

SECTION-B

- (a) Explain the order of reactivity of primary, secondary and tertiary alcohols with sodium metal. 2
(b) The boiling points of alcohol are higher than those of corresponding alkanes having similar molecular weights. Why ? Also explain the order of boiling points of isomeric alcohols. 2
- (a) Explain Claisen rearrangement with mechanism. 2
(b) Comment on the statement that phenols are more acidic than alcohols. 2

SECTION-C

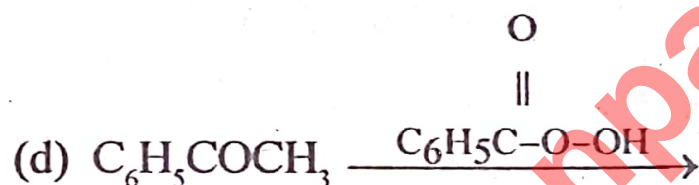
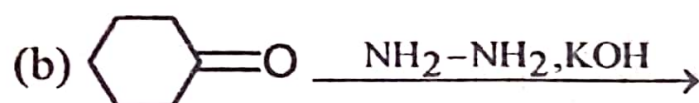
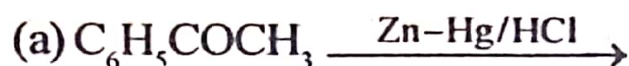
- (a) What are similarities and differences between ethylenic double bond and carbonyl group ? 2
(b) Write a short note on preparation of aldehydes from acid chlorides. 2
- (a) What are simple and mixed ketones ? Write down the structural formulae along with IUPAC names of all the possible carbonyl compounds having the formula C_4H_8O . 2
(b) Discuss the Synthesis of ketones using :
 - Nitriles
 - Carboxylic acids.2

SECTION-D

7. Explain the mechanism of the following reactions :

(a) Mannich reaction (b) Aldol Condensation.

8. Complete the following reactions :



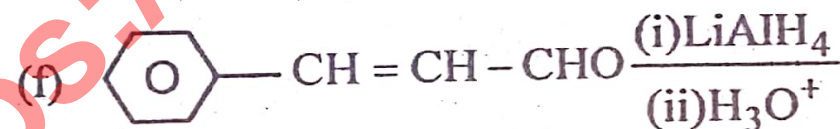
2×2=4

1×4=4

SECTION-E

(Compulsory)

9. (a) What is Tollen's reagent ?
(b) Give the structural formula of Crotonaldehyde.
(c) Write down the reaction of Ethylene glycol with nitric acid.
(d) Give the IUPAC name of sec-Butyl chloride.
(e) Write down the reaction of preparation of phenol from cumene.



1×6=6