

## PHARMACEUTICAL ORGANIC CHEMISTRY – I

Time: 3 hours

Max. Marks: 70

## PART – A

(Compulsory Question)

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- 1 Answer the following: (10 X 02 = 20 Marks)
- Write short note on Mesomeric effect.
  - Write the reaction of 3, 3-dimethyl-1-butene with: (i) HI. (ii) HBr in the presence of peroxide.
  - Why 1-butyne is more acidic than 2-butyne?
  - How can you say a  $S_N2$  Reaction proceeds with Stereo chemical Inversion of Configuration?
  - Write a short note on Reformatsky reaction.
  - “Aldehydes are oxidized easily to carboxylic acid but ketones are not” –Comment.
  - Predict the major products obtained on dehydrohalogenation of the following:  
 $CH_3-CH_2-CH_2-CH_2Cl$
  - Write short note on Oppenauer oxidation.
  - What is Sashes-Mohr theory? Write its merits.
  - Write the reaction of 1-Chloro and 2-Chloro butanes with KOH. What is the difference between the two reactions?

## PART – B

(Answer all five units, 5 X 10 = 50 Marks)

## UNIT – I

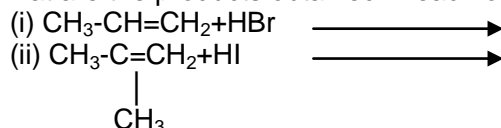
- 2 Write short notes on:
- Hybridization.
  - Impact of a structure on surface tension and solubility.

OR

- 3 Explain the following:
- Inductive effect.
  - Types of organic reactions.

## UNIT – II

- 4 What are the products obtained in each of the following reactions give a detailed mechanism:



OR

- 5 (a) Predict the products formed on mono chlorination of n-butane. Give reasons for the variation in proportion of each product formed.  
 (b) Outline the Bayer's strain theory.

## UNIT – III

- 6 (a) Explain with suitable example and mechanism, why conjugated alkadienes undergo more of 1, 4-addition than 1, 2-addition  
 (b) Write the reaction of 1-butene with: (i)  $Br_2$  in  $CCl_4$ . (ii) HCl. (iii)  $H_2SO_4$
- OR
- 7 (a) Write the products of reaction between HCl and 2, 4-hexadiene. Which is the major product at lower temperature? Which is the major product at higher temperature?  
 (b) Write a note on Anti Markovnikov rule.

Contd. in page 2

## UNIT – IV

- 8 (a) How do you effect the following conversion? Account for the formation of the product:



- (b) Discuss the factors that play role in  $\text{SN}^1$  and  $\text{SN}^2$ .

OR

- 9 (a) What is Walden inversion? Primary alkyl halides undergo  $\text{SN}^2$  reaction more easily than tertiary alkyl halides. Why?  
(b) Discuss any two important methods of preparation of alkyl halides.

## UNIT – V

- 10 (a) Write any two important methods of preparation of ketones.  
(b) Write a shot note on Aldol condensation.

OR

- 11 (a) Write the product formed in the following reaction:



- (b) How do you distinguish acetophenone and benzophenone?

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