

Instructions: All questions carry equal marks

Section I: Answer any three (3) questions out of eight (8)

Section II: All questions are compulsory

Illustrate your answers with neat diagrams/figures wherever necessary

## SECTION - I

Marks: 42

Answer any three (3) questions

- Q.1** Answer the following
- 1 Discuss protection and deprotection of amines. 7
  - 2 Complete the following conversions with suitable protecting group 7
- 
- Q.2** Answer the following
- 1 Discuss protection and deprotection alcohols. 7
  - 2 Complete the following conversions with suitable protecting group 7
- $\text{BrCH}_2\text{CH}_2\text{CHO} \longrightarrow \text{CH}_3\text{OCH}_2\text{CH}_2\text{CH}_2\text{CHO}$   
 (via Grignard reaction)
- Q.3** 1 Outline two important routes for retrosynthesis of the following 7
- 1 2
- 2 Outline the retrosynthesis of the following compounds 7
- 1 2
- Q.4** 1 Outline the retrosynthesis of the following compounds 7
- 1 2
- 2 Outline the retrosynthesis of the following compounds 7
- 1 2
- Q.5** Answer the following
- 1 Discuss regioselectivity in Michael Reaction 7
  - 2 Discuss the use of acetylenes in retro synthesis 7
- Q.6** Answer the following
- 1 Discuss regioselectivity and stereoselectivity in Wittig Reaction. 7

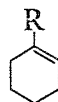
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- 2 Outline retrosynthesis of the following 7
- 1 2
- Q.7 1 Outline the retrosynthesis of the following 7
- 1 2
- 2 Outline the retrosynthesis of the following 7
- 1 2
- Q.8 Answer the following
- 1 Show the synthetic power of heterocycles in organic synthesis by 7
- a) Destruction of aromaticity and
- b) Temporary formation of heterocyclic intermediate
- 2 Outline retrosynthesis of the following 7
- 1 2

Section II 8

Answer in short

- 1 Give one method to protect and deprotect -COOH group
- 2 Give one use of 1,3-dioxalane
- 3 Define synthon with example
- 4 Define Chemoselectivity
- 5 Give synthetic equivalent for  $R^-$  and  $R^+$
- 6 Give one use of epoxide in retro synthesis.
- 7 Give synthetic equivalents for the following compound



- 8 Give just the first disconnection for the following compound

