

Seat No. : \_\_\_\_\_

# MM-154

March-2019

M.Sc., Sem.-IV

508 : Organic Chemistry

(Advance Organic Synthesis Chemistry)

Time : 2:30 Hours]

[Max. Marks : 70

- Instructions :**
- (1) All Questions carry equal marks.
  - (2) Figures to the right indicate full marks of that question.
  - (3) Section C in each question is compulsory.

1. Answer the following :

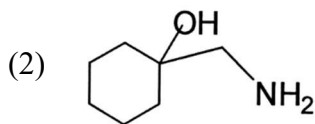
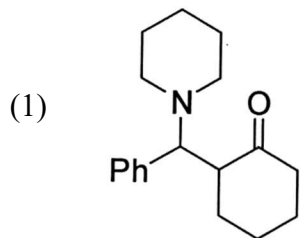
- (A) Discuss protection and deprotection of aldehydes and ketones. 7  
(B) Discuss protection and deprotection of amines by carbamates and amides. 7

**OR**

Answer the following :

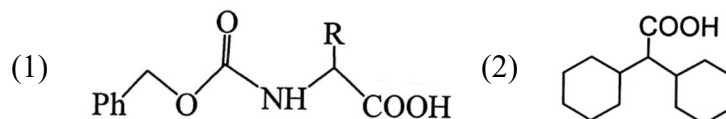
- (A) Discuss protection and deprotection of alcohols.  
(B) Discuss protection and deprotection of carboxylic acid groups.  
(C) Answer in short : (any **four**) 4
- (1) Give principle of protection and deprotection in organic synthesis.
  - (2) How will you protect glycerol to react terminal hydroxyl group ? Give Structure and use of :
  - (3) Pivaloate ester
  - (4) TMS ester
  - (5) N-nitroamine
  - (6) Cyclic imide

2. (A) Outline retrosynthesis of the following. 7



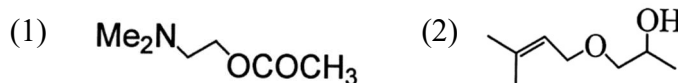
(B) Outline the retrosynthesis of the following

7

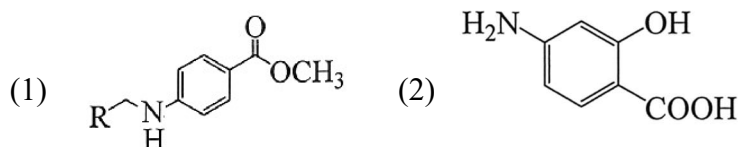


**OR**

(A) Outline the retrosynthesis of the following.



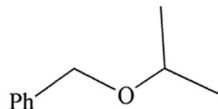
(B) Outline the retrosynthesis of the following.



(C) Answer in short : (any **four**)

4

- (1) Define Break down synthesis
- (2) Define synthons with example
- (3) Define FGI with example
- (4) Define Chemoselectivity with example
- (5) Give equivalent synthetic equivalent for



(6) Give example of 1, 1 - C - X disconnection with example

3. Answer the following :

(A) Discuss regio and stereo selectivity in Wittig Reaction.

7

(B) (1) Discuss the use of acetylene compounds in synthesis of alcohols

7

(2) Outline retrosynthesis of the following



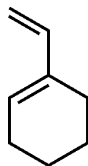
**OR**

Answer the following :

(A) Discuss regio selectivity in Michael Reaction.

(B) (1) Discuss the use of nitriles as umpolung reagent

(2) Outline retrosynthesis of the following



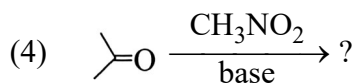
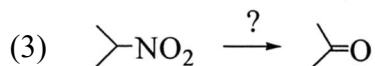
(C) Answer in short : (any **three**)

3

(1) Give the use of 1, 3-dithiane as umpolung reagent

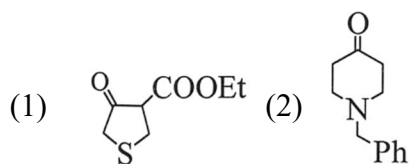
(2) Show one use of epoxide as umpolung reagent

Complete the following reactions



4. (A) Outline the retrosynthesis of the following.

7



(B) Answer the following

7

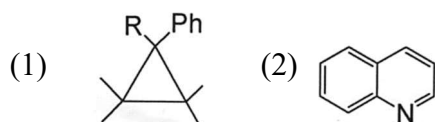
Show the synthetic power of heterocycles in organic synthesis by

(1) Destruction of aromaticity and

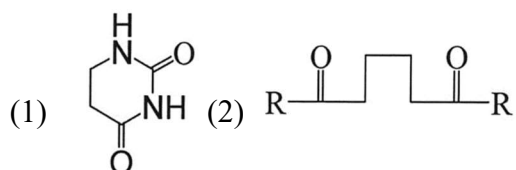
(2) Release of ring strain

**OR**

(A) Outline retrosynthesis of the following :



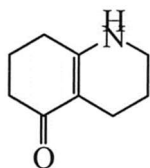
(B) Outline retrosynthesis of the following :



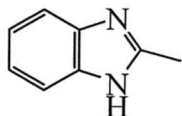
(C) Answer in short : (any **three**)

3

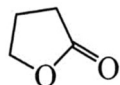
(1) Show only the 1st disconnection with synthon in the following



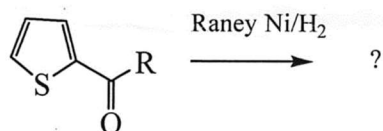
(2) Give synthetic equivalents for



(3) Give synthetic equivalent for



(4) Complete the following reaction



(5) Complete the following reaction

