

**MASTER OF SCIENCE (CHEMISTRY) (CBCS - 2018 COURSE)**  
**M.Sc. (Chemistry) Sem-III : WINTER :- 2021**  
**SUBJECT: ADVANCED ORGANIC REACTION MECHANISM**

Day : Thursday  
Date 20-01-2022

W-20150-2021

Time : 02:00 PM-05:00 PM  
Max. Marks: 60

**N.B.**

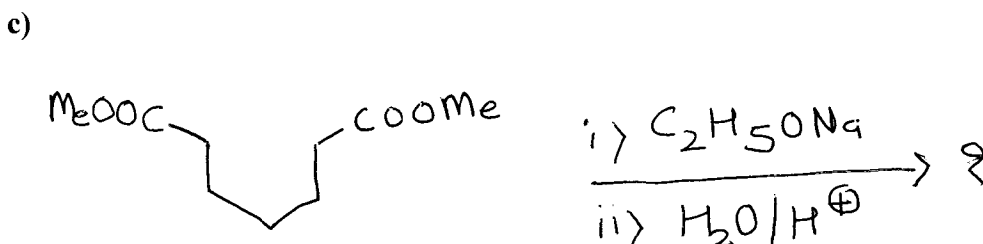
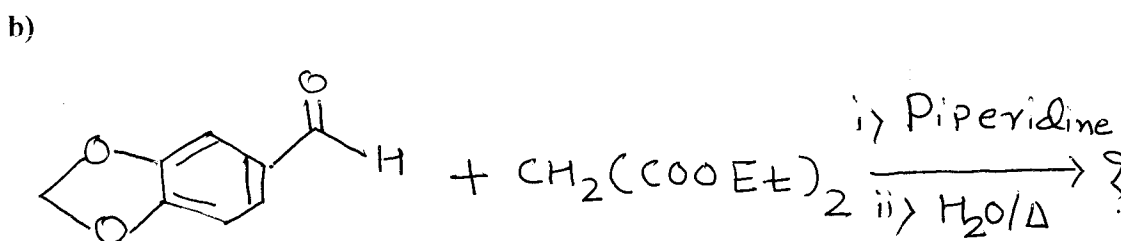
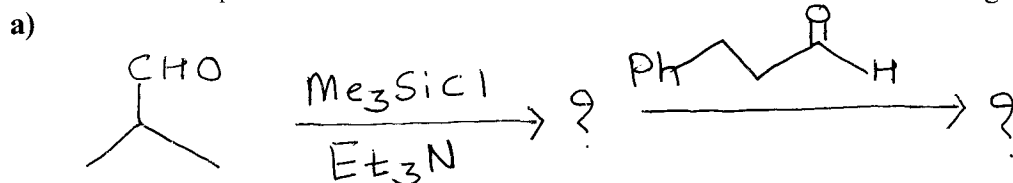
- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answers to both the sections should be written in **SEPARATE** answer book.

**SECTION - I**

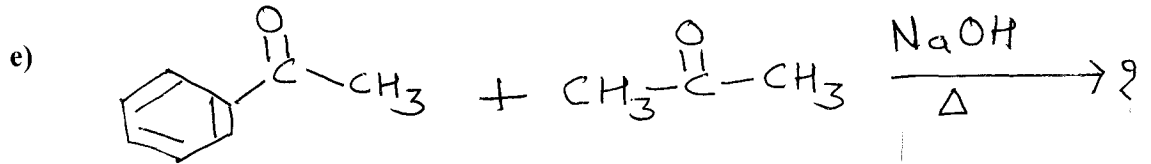
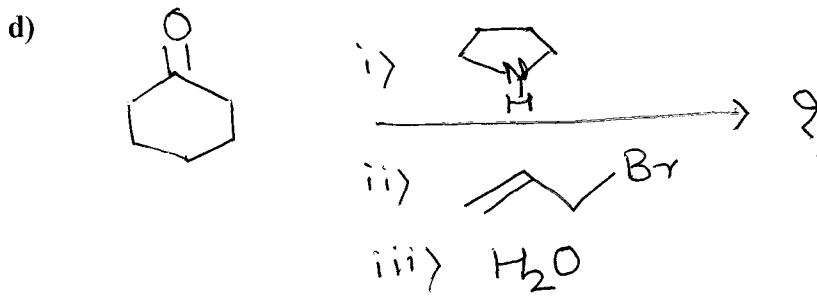
**Q.1** Attempt any **THREE** of the following: (15)

- a) What is Mannich Reaction? Discuss its mechanism and applications.
- b) What are carbanions? Explain carbanion character in the phenoxide anion with example.
- c) Explain the following:
  - i) Why does 1, 3cyclohexanedion has higher enol content than acetyl acetone?
  - ii) Why does ethyl acetoacetate has lower enol form than acetyl acetone?
- d) What is Darzen condensation? Discuss its mechanism and applications.
- e) Write a note on Cannizzaro's reacton.

**Q.2** Predict the product/s with mechanism of **ANY THREE** of the following: (15)



P.T.O.

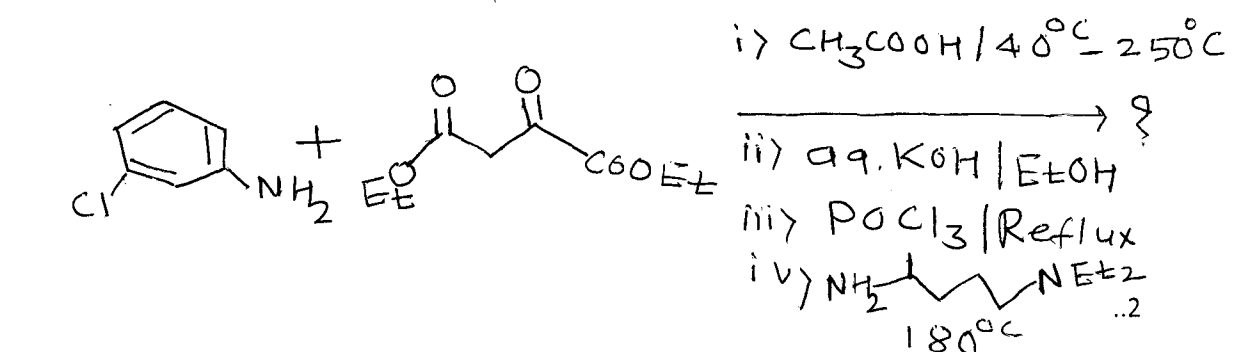
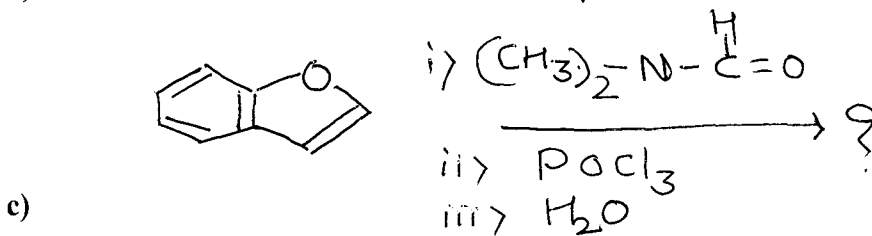
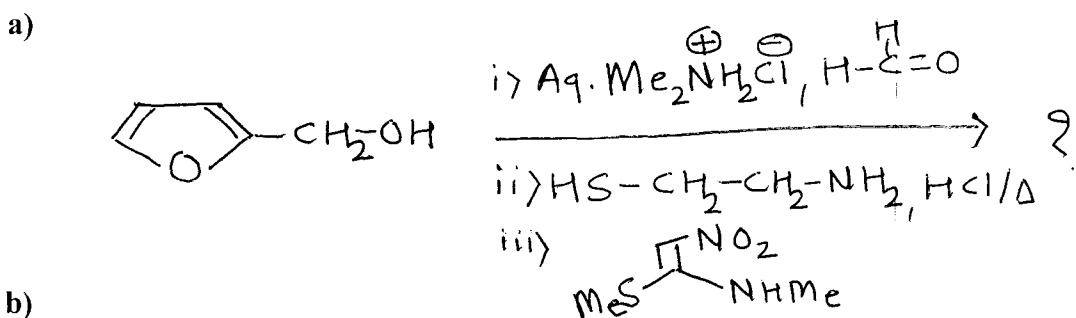


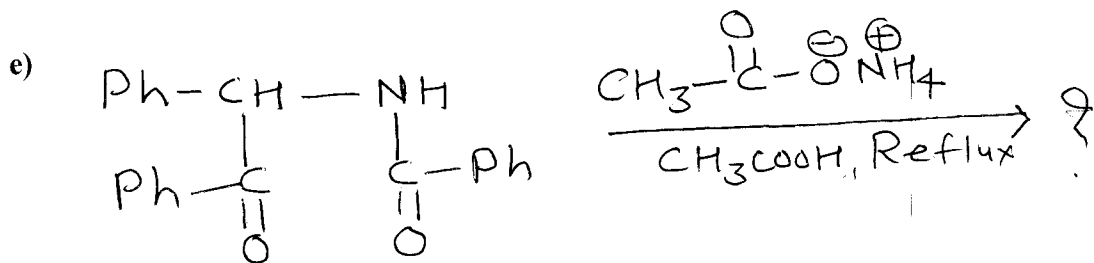
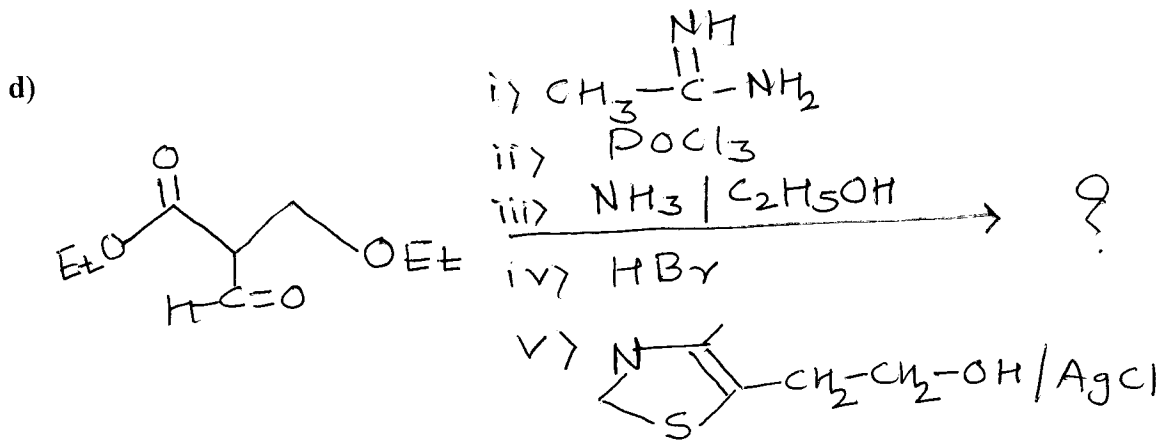
### SECTION - II

Q.3 Attempt any **THREE** of the following: (15)

- Why an electrophilic substitution in Indole takes place at C<sub>3</sub> position? Explain with example.
- Discuss the synthesis of benzothiophene.
- Explain the synthesis of Papavarine.
- How is quinolone prepared from aniline by Skraup's synthesis method?
- Write a note on : Chichibabin reaction.

Q.4 Predict the product/s with mechanism for **ANY THREE** of the following: (15)





\* \* \*