Enroll No. _____

Shree Manibhai Virani and Smt. Navalben Virani Science College (Autonomous)

Affiliated to Saurashtra University, Rajkot

SEMESTER END EXAMINATION NOVEMBER – 2016

M.Sc. Industrial Chemistry

16PICCC04 - ORGANIC SYNTHESIS & DISCONNECTION APPROACH

Duration of Exam – 3 hrs ***Semester – I*** ***Max. Marks – 70***

Part A (5x2= 10 marks)

Answer **ALL** questions

1. Explain formation and stability of Carbocation and Carbanion with one example.
2. Discuss formation and stability of Enamines and Phosphorus ylides.
3. Define rearrangement with example.
4. Define Synthetic equivalent and FGI with one example.
5. Explain Umpolung and Dissonant polarity with example.

Part B (5X5 = 25 marks)

Answer **ALL** questions

6a. Describe Baeyer-Villiger oxidation and its mechanism. Write any two applications.

OR

6b. Describe Dieckmann reaction and its mechanism. Write any two applications.

7a. Explain Appel reaction, mechanism and its two applications.

OR

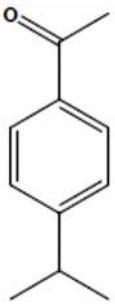
7b. Explain mechanism of Pictet-spengler reaction and its two applications.

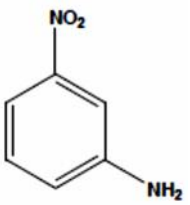
8a. Discuss Lossen rearrangement in detail.

OR

8b. Discuss 1,2-Wittig rearrangement in detail.

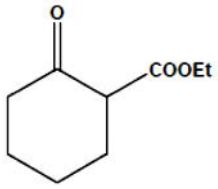
9a. Give the disconnection analysis and synthesis of the following compounds

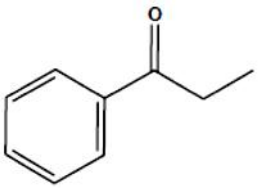




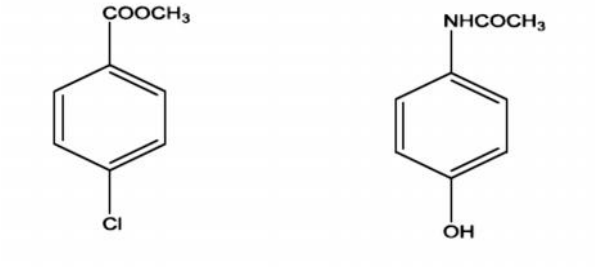
OR

9b. Give the disconnection analysis and synthesis of the following compounds



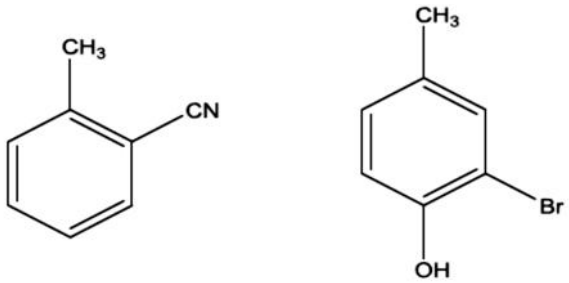


10a. Using FGI operation, Give the disconnection and synthesis of the following compound.



OR

10b. Using FGI operation, Give the disconnection and synthesis of the following compound.



<u>Part C</u> (5X7 = 35 marks)

Answer **<u>ALL</u>** questions

11a. Explain Vilsmeier-Haack reaction, its mechanism and four applications.

OR

11b. Write Junjappa-Ila annulation reaction. Discuss its mechanism and four applications.

12a. Write Mitsunobu reaction. Discuss its mechanism and four applications.

OR

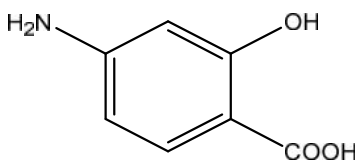
12b. Explains Schmidt reaction, mechanism and its four applications.

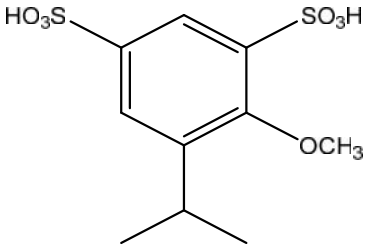
13a. Explain Benzilic acid rearrangement, its mechanism and discuss four applications.

OR

13b. Explain Claisen rearrangement, its mechanism and discuss four applications.

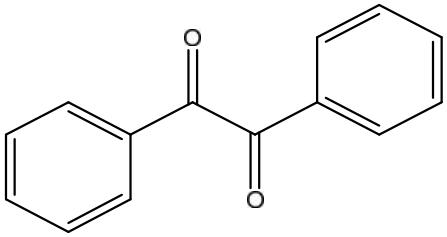
14a. Give the disconnection analysis and synthesis of the following compounds

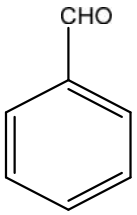




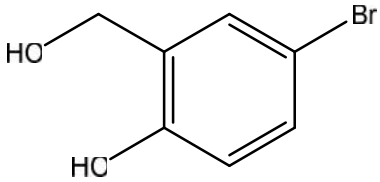
OR

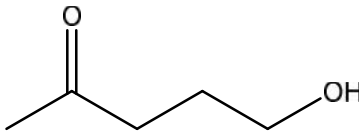
14b. Give the disconnection analysis and synthesis of the following compounds.





15a. Give the disconnection analysis and synthesis of the following compounds.





OR

15b. Give the disconnection analysis and synthesis of the following compounds.