

Exam. Code : 103204

Subject Code : 7012

B.A./B.Sc. 4<sup>th</sup> Semester (Old Syllb 2018)

## CHEMISTRY

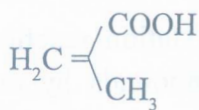
## (Organic Chemistry—III)

Time Allowed—3 Hours] [Maximum Marks—35

**Note** :— The question paper has *two* parts. Part-A is compulsory. Part-B has *three* sections. *Two* questions are to be attempted from each of these sections (total *six* questions from Part-B).

## PART—A

1. Write the IUPAC and common name of the following compound :



2. What product would be formed if benzoyl chloride reacts with piperidine in the presence of base ?
3. Write product(s) of the following reaction :



4. What is the use of tetraalkylammonium salt ?
5. Write structure of 18-Crown-6.
6. Write the product of the following reaction :



7. What product will be formed when  $\beta$ -dicarbonyl compound react with an aldehyde and ammonia followed by oxidation ?
8. Why pyridine is more basic than pyrrole ?  $8 \times 1 = 8$

### PART—B

#### SECTION—I

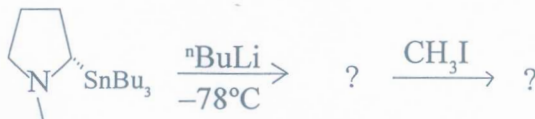
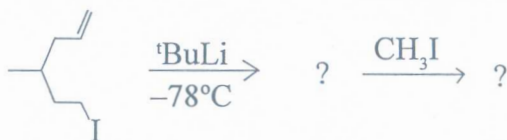
9. Discuss mechanism of decarboxylation reaction of carboxylic acid and related compounds by taking suitable examples. 4.5
10. On the basis of general mechanism for amide hydrolysis in basic solution, write mechanism for hydrolysis of N, N-dimethylformamide. 4.5
11. What structural features are responsible for the reactivity order of carboxylic acid derivatives ? Explain by taking suitable examples. 4.5

## SECTION—II

12. Show how you could prepare each of the following amines from benzaldehyde by reductive amination :
- (a) Benzylamine  
 (b) N, N-Dimethylbenzylamine  
 (c) N-Benzylpiperidine. 4.5
13. Discuss physical properties, preparation and synthesis of ethers. 4.5
14. Discuss nucleophilic substitution and reduction reactions of nitroarenes. 4.5

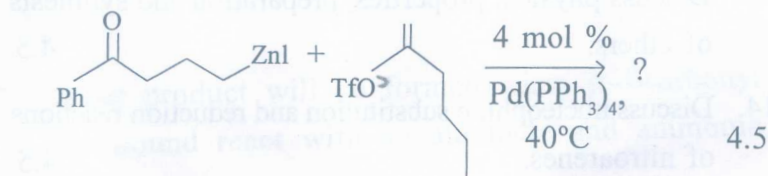
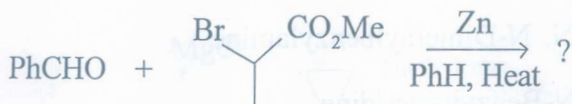
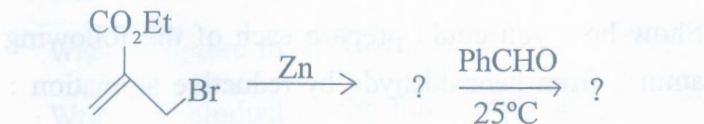
## SECTION—III

15. How organolithium reagents can be prepared ? Complete the following reactions :



4.5

16. Complete the following reactions :



17. Which position of five membered heterocyclic ring is preferred for electrophilic substitution reaction ? Write structure of product formed during acetylation and mercuration of furan. 4.5