

Exam. Code : 103201

Subject Code : 8002

B.A./B.Sc. 1st Semester (Old Syllb 2018)

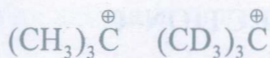
CHEMISTRY (Organic Chemistry-B)

Time Allowed—3 Hours] [Maximum Marks—35

Note :— Attempt **five** questions, selecting at least **one** from each Section. The **fifth** question may be attempted from any Section.

SECTION-A

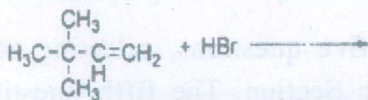
1. (a) Ethylamine is more basic than acetamide, why ?
1.5
- (b) How do you explain the stability of tropylium cation ?
2.5
- (c) Which of the following carbocation is more stable and why ?
3



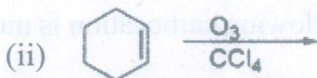
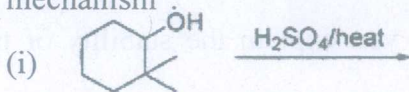
2. (a) How do you explain the *o*, *p*-directing nature of $-\text{CH}_3$ group, though it lacks electron pair. 3
- (b) Why $-\text{CH}_2\text{COO}_2\text{H}_5$ is more stable than $(\text{CH}_3)_3\overset{\oplus}{\text{C}}$?
2
- (c) Which of the two, *p*-toluidine and *p*-nitroaniline is more basic and why ?
2

SECTION-B

3. (a) What is meant by orientation in halogenation in alkanes ? What are factors influencing it ? 4
- (b) Complete the following reaction with suitable mechanism : 3

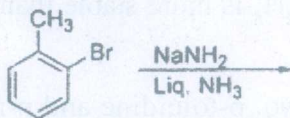


4. (a) Why alkynes are less reactive than alkenes towards electrophilic substitution reaction ? 3
- (b) Complete the following reactions with suitable mechanism : 2+2



SECTION-C

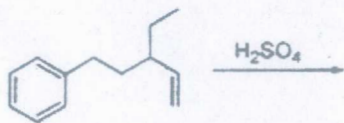
5. (a) Complete the following reaction with suitable mechanism and give explanation for the product expected : 3



- (b) 1-chlorobut-2-ene reacts with KCN to give a mixture of isomeric products. Give the structures and suitable mechanism for the isomeric products. 2
- (c) What are the limitations for Baeyer's strain theory? 2
6. (a) Giving a suitable example, justify the fact that " S_N1 reaction proceeds with partial racemization". 3
- (b) Out of chlorobenzene and cyclohexyl chloride, which one is more reactive towards nucleophilic substitution reaction and why? 2
- (c) Cyclopropane is the least stable member of cycloalkane series, why? 2

SECTION-D

7. (a) Why aniline is more reactive than acetanilide in electrophilic substitution reaction? 3
- (b) Complete the following reactive with a suitable mechanism: 4



8. Complete the following reactions with suitable mechanism : 3.5+3.5

