

## SECTION - D

- (a) Why are  $S_N^2$  displacements more difficult with 2-chloro-2-methylbutane than with 1-chloro-2-methylbutane? 3
- (b) Explain the mechanism of  $S_N^1$  reaction of R-X with energy profile diagram. 3
- (c) How does the resonance theory explain the low reactivity of halides? 3
- (d) Give mechanism of elimination-addition reaction in halides and also give evidence in support of it. 3

Roll No. ....

21203

B. Sc. (Pass Course) 2nd Semester  
Examination - May, 2019

CHEMISTRY-III (Organic Chemistry-III)

Paper : CH-203

Time : Three hours ] [ Maximum Marks : 29

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt five questions in all, selecting one question from each Unit. Question No. 1 is compulsory and is of 5 marks. All other questions are of 6 marks.

1. Compulsory Question : 5 x 1 = 5
- (a) What is Hoffmann elimination reaction? Explain with suitable example.
- (b) Write down the attacking species in sulphonation of benzene.
- (c) Define anti-aromatic compounds. Give examples.

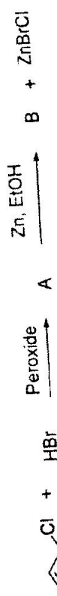
(4)

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- (d) What happens when  $\text{CaC}_2$  is treated with  $\text{H}_2\text{O}$  ?  
 (e) Write down the structure of 1-chloro-2,2-dimethylpropane.

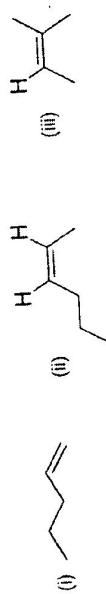
## SECTION - A

2. (a) Identify A and B in the following reaction : 3

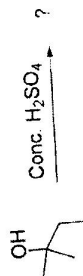


- (b) How will you differentiate between 1-pentene and 2-pentene by ozonolysis method? 3

3. (a) Write IUPAC name of the following compounds : 3



- (b) Write down the product with mechanism for the following reaction : 3



## SECTION - B

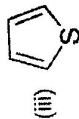
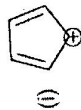
4. (a) Describe the mechanism of following Friedel-Crafts alkylation reaction : 3



(2)

- (b) Write down the steps involved in the reaction of toluene with mechanism.

5. (a) Which of the following has aromatic character? why?



- (b) How will you account for the fact that a methyl group at the benzene ring is *ortho*-directing while  $-\text{CHO}$  group is *meta*-directing? 3

## SECTION - C

6. (a) Discuss the orbital structure of acetylene. How will you explain the acidic nature of C-H bond in acetylene? 3  
 (b) Write down the effect of temperature on the reactivity of dienes towards conjugated dienes.
7. (a) Write a short note on Diels-Alder reaction. 3  
 (b) Discuss the relative stabilities of the following dienes over isolated dienes.

(3)