

4642

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5. (a) Describe the stereochemistry involved in SN2 mechanism during the hydrolysis of alkyl halide.
- (b) (i) Explain nitration of benzene with proper mechanism.
- (ii) Nitro group in nitrobenzene is meta directing, why?
- (c) Why hydrolysis of 2-Bromo-3-methyl butane gives only 2-methyl-2-butanol? (5,5,5)
6. Write short notes on **any three** :
- (a) Friedel craft's acylation
- (b) Homolytic and Heterolytic fissions
- (c) Cope Elimination
- (d) Sulphonation of Benzene
- (e) Meso compounds (5,5,5)

(200)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 4642

J

Unique Paper Code : 2174001002

Name of the Paper : GE Basic Concepts of Organic Chemistry

Name of the Course : **All Undergraduate Courses Except with Chemistry Discipline**

Semester : II / IV / VI

Duration : 2 Hours

Maximum Marks : 60

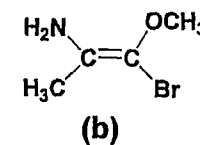
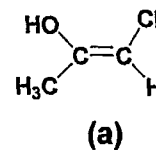
Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Answer **four** questions in all.
3. Each question carries **15** marks.

P.T.O.

1. (a) Define Huckel's rule. Give and explain the increasing aromatic stability order for pyrrole, thiophene, furan and benzene.
 - (b) Explain, why SN1 mechanism for the solvolysis reaction of alkyl halides leads to racemization?
 - (c) What is ambident nucleophile? How would you prepare alkyl cyanides and alkyl isocyanides from a given alkyl halide? (5,5,5)
2. (a) (i) Why benzylamine is more basic than aniline? Explain.
 - (ii) Why 2-chloroacetic acid is stronger acid than acetic acid.
 - (b) (i) Describe Hyperconjugation and its applications.
 - (ii) Write all the resonating structures of benzyl carbocation.
 - (c) What are free radicals? Describe the increasing order of stability for tertiary, secondary, and primary alkyl free radicals with proper reasoning. (5,5,5)

3. (a) Why addition of bromine to 2-Butene is anti-addition? Explain giving mechanism.
 - (b) Explain oxy-mercuration demercuration reaction on 1-Propene.
 - (c) Differentiate between Hoffman and Saytzeff's elimination using 2-Bromo butane as an example. (5,5,5)
4. (a) What is optical rotation? Define enantiomers and diastereomers with at least one example each.
 - (b) Giving the priority order, deduce the E/Z configuration to the following structures :



- (c) Assign the priority order and designate R/S configuration to the following structures :

