

5045

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- (b) Explain SN_2 reaction with mechanism and stereochemistry involved.
- (c) What do you understand by Geometrical isomerism. Explain E/Z isomerism and draw the E/Z isomers of 1,2-dichloroethene. (5,5,5)
5. (a) Classify the following as electrophiles or nucleophiles. Justify your answer for SO_3 , CCl_2 , BF_3 , NH_3 , H_2O .
- (b) Show E1 and E2 mechanism with example. Differentiate between Hoffmann and Cope Elimination reaction.
- (c) Explain why nitrobenzene directs the incoming electrophile to meta position. Draw the resonating structure to justify the answer. (5,5,5)
6. Write short notes on the following : (Any Three)
- (i) Stability, Shape and hybridization of Free radical
- (ii) Friedel Craft Alkylation
- (iii) Ozonolysis of alkenes and alkynes
- (iv) Nitration of benzene with mechanism. (5,5,5)

(200)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 5045

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

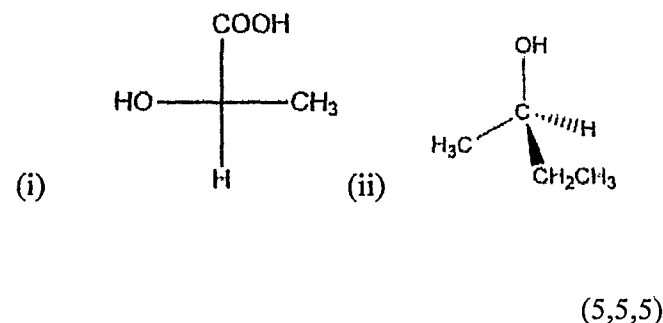
Instructions for Candidates

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. Account for the following statements (Any Five)
 - (a) Explain why Benzylamine is more basic than aniline
 - (b) How does the solvent system effect the SN1 and SN2 mode of reaction?
 - (c) Why addition of bromine to propene is anti-addition? Explain giving mechanism.
 - (d) Write short notes on aromaticity and role of Huckle rule in aromaticity.
 - (e) Clarify Racemic Mixture is optically inactive with example
 - (f) What is electromeric effect? Explain with the help of suitable reaction. (3,3,3,3,3)
2. (a) Comment and discuss that 2,2,2-trifluoroethanol is much more acidic than ethanol with respect to dipole moment.
- (b) Explain Inductive effect and resonance effect. (Give at least four points of difference).
- (c) What is hyperconjugation effect? Explain the order of stability of primary, Secondary and tertiary carbocations on the basis of this effect. (5,5,5)

3. (a) Draw all the possible stereoisomers of 2,3-Dibromopentane in Fischer Projection. Comment on their optical activity and give the relationship between them. Designate erythro and threo nomenclature to each stereoisomer.
- (b) Define chirality. How do you identify a chiral carbon in a compound? Explain with an example of 2-butanol.
- (c) Assign R/S to the following compounds (any two) and convert Fisher projection to Newman or vice versa.



4. (a) How will you identify Markownikoff and anti-markownikoff addition in alkenes addition reaction. Explain with any suitable example in electrophilic addition of alkene.