

Seat No.:

No. of Printed Pages: 02



A Charutar Vidya Mandal's Institution  
**V.P. & R.P.T.P. SCIENCE COLLEGE**  
(AUTONOMOUS) (Grant-in-Aid)  
Affiliated to Sardar Patel University  
VALLABH VIDYANAGAR-388120



**Bachelor of Science (Semester-3) External Examination October- 2025**  
**US03MAICH02 – ORGANIC CHEMISTRY**

Date: 07/10/2025, Tuesday

Time: 02:00 PM to 04:30 PM

Total marks: 50

NOTE: Figure to the right indicate full marks of the questions.

Q-1 Write the answer of following multiple-choice questions. (All are compulsory) [10]

- Oxymercuration-demercuration is a two-step reaction that converts ..... into Alcohols.  
(a) alkenes  
(b) halides  
(c) carboxylic acids  
(d) alkynes
- Which of the following compound is a secondary amine?  
(a)  $\text{CH}_3\text{-CH(NH}_2\text{)-CH}_3$   
(b)  $\text{H}_2\text{NCH}_2\text{CH}_2\text{NH}_2$   
(c)  $\text{CH}_3\text{NHCH}_3$   
(d)  $(\text{CH}_3)_3\text{N}$
- Aldehydes are prepared by the oxidation of ...  
(a) Primary alcohol  
(b) Secondary alcohol  
(c) Tertiary alcohol  
(d) Methyl halide
- $\text{R-Mg-X}$  is...  
(a) a Tollens' reagent  
(b) a Grignard reagent  
(c) a Collins reagent  
(d) a Baeyer's reagent
- The IUPAC name of  $\text{CH}_3\text{-COO-CH}_3$ .  
(a) Methyl ethanoate  
(b) Butanone  
(c) Propanal  
(d) Ethyl propanoate
- What is the product when Pyridine reacts with  $\text{H}_2\text{SO}_4$  at  $350^\circ\text{C}$ ?  
(a) 3-Pyridinesulfonic acid  
(b) 1-Pyridinesulfonic acid  
(c) 2-Pyridinesulfonic acid  
(d) 2,4-Pyridinedisulfonic acid
- Which of the following is a six-member heterocyclic compound?  
(a) Phenol  
(b) Cyclohexane  
(c) Phenol  
(d) Pyridine
- A mixture of equal parts of enantiomers is called...  
(a) absolute mixture  
(b) structural mixture  
(c) diastereomers  
(d) racemic mixture
- What is the relationship between enantiomers?  
(a) They are identical molecules  
(b) They are mirror images that are superimposable  
(c) They are non-superimposable mirror images  
(d) They have different molecular formulas
- How many chiral carbon presents in 2-iodobutane structure?  
(a) 1  
(b) 2  
(c) 4  
(d) 3



- Q-2 (A) Write a note on 'Sandmeyer reaction'. [5]  
(B) Discuss the reactions of Amine with Nitrous acid. [5]  
OR
- Q-2 (A) Write a note on 'Williamson's ether synthesis'. [5]  
(B) Explain 'Oxymercuration-demercuration of Alkenes'. [5]
- Q-3 (A) Write a note on the Hell-Volhard-Zelinsky reaction in detail. [5]  
(B) Discuss addition of Grignard reagents in Aldehydes and ketones. [5]  
OR
- Q-3 (A) Write a note on preparation of aldehydes. [5]  
(B) Discuss Reimer-Tiemann reaction and Fritsch-Craft reaction. [5]
- Q-4 (A) Discuss the structure of Pyridine. [5]  
(B) Write a note on electrophilic aromatic substitution reactions in Pyridine. [5]  
OR
- Q-4 (A) Write synthesis of Pyrrole; and discuss electrophilic substitution reaction in Pyrrole. [5]  
(B) Write synthesis of Furan; and discuss electrophilic substitution reaction in Furan. [5]
- Q-5 What is stereochemistry? Write a note on Polarimeter in detail. [10]  
OR
- Q-5 (A) Discuss R and S nomenclature for an optically active compound in stereochemistry. [5]  
(B) Discuss in detail about Racemic modification. [5]

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