



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 I)
Subject : Basic Organic Chemistry – I
Date: 22ND November 2024, Friday

External Examination : November, 2024
Subject Code : US01SECHE11
Time: 11:00 AM to 12:30 PM
Total marks : 25

Note : (i) All questions are to be attempted.

(ii) Figures to the right indicate marks.

EXAM NUMBER : _____

NUMBER OF PRINTAGE PAGES : 02

Q.1 Choose the correct option for the following : [05]

- (i) How many steps are involve in E1 reaction mechanism ?
 (a) One (b) Two (c) Three (d) None of these
- (ii) How many isomer are possible for n - Pentane ?
 (a) 5 (b) 4 (c) 3 (d) 2
- (iii) Addition of HBr to 1 – Propene follow _____ .
 (a) Markovnikov's rule (b) Anti - Markovnikov's rule
 (c) Saytzeff 's rule (d) None of these
- (iv) Which type of hybridization is present for halogenated carbon atom of aryl halides ?
 (a) carbocation (b) sp^2 (c) sp (d) None of these
- (iv) Which of the following intermediate is produced during homolytic bond cleavage of alkyl halide ?
 (a) carbocation (b) carbanion (c) free radical (d) None of these

Q.2 Answer the following :

- (i) Give reaction mechanism for free radical halogenation of alkane. [05]
- (ii) Boiling point of cis-2-butene is higher than trans-2-butene but m.p. of cis-2-butene is higher than trans-2-butene. Explain it. [05]

OR

Q.2 Answer the following :

- (i) The names given below are objectionable. Write their structure and give their correct IUPAC name. [05]
 (a) 3 – Methyl – 2 - butene (b) 1,1,1 – Trimethylpentane
 (c) 2 – Ethyl – 1 - propene (d) 2 – Isopropyl – 1 - propene
 (e) 1,1 Dimetyl – 2 - butene
- (ii) Explain ozonolysis of 2 – Hexene and 3 - Hexene. [05]

[PTO]

Q.3

Answer the following :

- (i) Explain S_N1 and S_N2 reaction mechanism. [05]
- (ii) Give all possible isomeric structure for the compound having molecular formula C_4H_9Br and give their IUPAC name and also classify them as 1° , 2° , 3° alkyl halides. [05]

OR

Q.3

Answer the following :

- (i) Arrange the increasing order of reactivity for the following molecules towards S_N1 reaction and explain it. [05]
 - (a) Tert – butylbromide
 - (b) Ethyl chloride
 - (c) Isopropyl chloride
 - (d) Methyl chloride
- (ii) Discuss the structure of carbocation and also explain relative stabilities of carbocation. [05]

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