V. P. AND R. P. T. P. SCIENCE COLLEGE
VALLABH VIDYANAGAR
B.Sc. INTERNAL EXAMINATION-2017 (IInd SEMESTER)
SUBJECT : ORGANIC CHEMISTRY
COURSE CODE : US02CCHE01

DATE : 08-03-2017 TIME : 01.30 p.m. TO 2.30 p.m.
DAY : WEDNESDAY TOTAL MARKS : 25

Q. 1 Choose the correct option from the following 3

(i) Which type of H-atoms are replace during the monochlorination of isopentane in presence of light ?
(a) 1^0 and 2^0 (b) 2^0 and 3^0 (c) 1^0, 2^0 and 3^0 (d) 1^0 and 3^0.

(ii) Which of the following compound give acetic acid and acetone molecules upon reaction with cold $KMnO_4/NaIO_4$?
(a) Isobutene (b) 1-butene (c) 1-propene (d) 2-methyl-2-butene.

(iii) Which of the following molecule has great tendency to undergo S_N1 reaction ?
(a) t-butyl bromide (b) Methyl bromide
(c) n-butyl bromide (d) Neopentyl bromide.

Q. 2 Answer the following (ANY TWO) 4

(i) Give successfulness and unsuccessfulness of Baeyer angle strain theory.

(ii) Why ethane is weaker acid than acetylene.

(iii) Why high concentration of nucleophile favour the S_N2 reaction and low concentration of nucleophile favour the S_N1.

Q. 3 Answer the following

(a) Compete the following reaction and give detail stepwise mechanism. 3

Alkane (RH) + Cl_2 + $h\nu$ $\rightarrow$? + ?

(b) Arrange the following molecules in the increasing order of their stability according to Baeyer strain theory and explain your answer. 3

(a) Cyclopropane (b) Cyclopentane (c) Cyclohexane.

OR

Q. 3 Answer the following

(a) Calculate the percentage of **all** isomeric products obtain upon monochlorination of **n-pentane**. The relative reactivity of 1^0, 2^0, and 3^0 H-atoms are 1: 3.8 : 5 respectively. 3

(b) Give the synthesis of 2,2-dimethyl hexane from tert.-butyl chloride and appropriate alkyl halide by using Corey-House synthetic route. 3

[P.T.O.]

Q. 4 Answer the following

(a) Give the synthesis of 2-butyne from acetylene. 3

(b) Give detail stepwise reaction mechanism for dimerization of isobutylene. 3

OR

Q. 4 Answer the following

(a) Give detail stepwise reaction mechanism for halohydrin formation. 3

(b) Trans-2-butene is more stable than cis-2-butene. 3

Q. 5 Answer the following

(a) Neopentyl bromide react with ethanol to give ethyl tert.-pentyl ether and not ethyl neopentyl ether. 3

(b) m-bromoanisol and o-bromoanisol react with amide ion to give same product m-anisidine. 3

OR

Q. 5 Answer the following

(a) Complete the following reaction and give detail stepwise mechanism. **3**

o-Fluoroanosol + Phenyl lithium + H_2O → ?

(b) Give the difference between S_N1 and S_N2 . **3**

THE END

There is no short cut, except hard work with understanding to excel in examination.