V. P. AND R. P. T. P. SCIENCE COLLEGE
VALLABH VIDYANAGAR
B. Sc. INTERNAL EXAMINATION- 2014 (IInd SEMESTER)
SUBJECT : ORGANIC CHEMISTRY
COURSE CODE : US02CCHE01

DATE : 11-03-2014 TIME : 11.00 a.m. TO 12.00 Noon

DAY : TUESDAY TOTAL MARKS : 30

Q.1 ANSWER THE FOLLOWING (ANY THREE) 6

(i) Cyclopropane is more prone to undergo ring opening reaction rather than cyclobutane.

(Ii) Give the successful and unsuccessful of Baeyer's angle strain theory.

(iii) Acetylene is stronger acid than ethane.

(iv) E1 elimination reaction follows second order kinetics.

(v) Hydrolysis of p-nitroacetanilide is best carried out in acidic medium and not in a basic medium.

(vi) 3^0 alkyl halide does not undergo S_N2 reaction but follows S_N1 reaction.

Q.2 ANSWER THE FOLLOWING

(I) Complete the following reaction and give stepwise detail mechanism. 4

$$CH_4 + Cl_2 \xrightarrow{light} ?$$

(ii) What is the meaning of Baeyer's strain theory of the modern picture of the covalent bond? 4

OR

Q. 2 ANSWER THE FOLLOWING

(i) Calculate the percentage of isomeric products obtained upon monochlorination of n-Pentane 4

(ii) What is meant by heat of combustion? Discuss the stability of various cycloalkanes with respect to heat of combustion. 4

[P.T.O.]

Q.3 ANSWER THE FOLLOWING

(i) Write reaction mechanism for the dimerization of isobutylene. 4

(ii) Cis-2-butene is less stable than trans-2-butene. 4

OR

Q.3 ANSWER THE FOLLOWING

(i) **Give difference between following with at least one suitable example.** 4

(a) Oxymercuration–Demercuration and Hydroboration-Oxidation.

(b) E1 and E2 elimination.

(ii) Give stepwise detail reaction mechanism for the addition of bromine to an alkene via bromonium ion. 4

Q.4 ANSWER THE FOLLOWING

(i) Compare the S_N1 and S_N2 reaction with respect to (a) Number of steps (b) Rate and order (c) Molecularity (d) Transition state of slowest step. 4

(ii) Account both *o*-bromoanisole and *m*-bromoanisole yields the same product *m*-anisidine in presence of NH_2^- /NH_3. 4

OR

Q.4 ANSWER THE FOLLOWING

(i) Complete the following reaction and give appropriate detail mechanism for the following. 4

$$\text{Chlorobenzene} \xrightarrow[NH_3]{NH_2^-} ?$$

(ii) Write all the **possible** isomeric structural formula for the compound having molecular formula C_4H_9Br. Classify them as 1^0, 2^0 and 3^0 alkyl halides. 4

THE END

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