

V. P. AND R. P. T. P. SCIENCE COLLEGE
VALLABH VIDYANAGAR
B.Sc. INTERNAL EXAMINATION MARCH-2018 (IInd SEMESTER)
SUBJECT : ORGANIC CHEMISTRY
COURSE CODE : US02CCHE01

DATE : 14-03-2018

TIME : 01.30 p.m. TO 2.30 p.m.

DAY : WEDNESDAY

TOTAL MARKS : 25

Q. 1 Choose and rewrite the correct option for the following **3**

- (i) Which of the following is weakest acid in nature ?
(a) Alcohol (b) Alkane (c) Ammonia (d) Water.
- (ii) Addition of HBr to unsymmetrical alkene in presence of peroxide follows the :
(a) Anti Markovnikov's rule (b) Markovnikov's rule
(c) Saytzeff 's rule (d) Electrophilic addition.
- (iii) Which of the following molecule has great tendency to undergo S_N^2 reaction ?
(a) t-butyl bromide (b) Neopentyl bromide.
(c) Methyl bromide (d) n-butyl bromide

Q. 2 Answer the following (ANY TWO) **4**

- (i) Give successfulness and unsuccessfulness of Baeyer angle strain theory.
- (ii) Why acetylene is stronger acid than ethane.
- (iii) Why strong nucleophile favour the S_N2 reaction and weak nucleophile favour the S_N1 reaction.

Q. 3 Answer the following

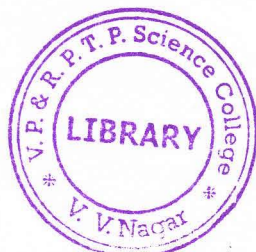
- (a) Complete the following reaction and give detail stepwise mechanism. **3**
$$\text{Alkane (RH)} + \text{Cl}_2 \rightarrow ? + ?$$
- (b) Arrange the following molecules in the **decreasing** order of their stability **3**
according to Baeyer angle strain theory and **explain** your answer.
(a) Cyclobutane (b) Cyclopropane (c) Cyclohexane.

OR

Q. 3 Answer the following

- (i) Calculate the percentage of **all** isomeric products obtain upon monochlorination of 2,3-dimethyl butane. The relative reactivity of 1° , 2° and 3° H-atoms are 1: 3.8 : 5 respectively. **3**
- (ii) Give the synthesis of 3-methyl octane from sec-butyl chloride and appropriate **3**
alkyl halide by using Corey-House synthetic route.

[P.T.O.]



Q. 4 Answer the following

- (i) Give the synthesis of 1-propyne from ethylene. 3
(ii) Give detail stepwise reaction mechanism for alkylation. 3

OR

Q. 4 Answer the following

- (i) Give detail stepwise reaction mechanism for halohydrin formation. 3
(ii) Why propylene react with HBr to give isopropyl bromide but in presence of peroxide it give n-propyl bromide as a actual product. 3

Q. 5 Answer the following

- (a) Neopentyl bromide react with ethoxide ion to give ethyl tert.-pentyl ether and not ethyl neopentyl ether. 3
(b) Why aryl halides are less reactive towards nucleophilic substitution reaction. 3

OR

Q. 5 Answer the following

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



- (b) Give the difference (at least five) between S_N1 and S_N2 . 3

THE END

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

