



V. P. AND R. P. T. P. SCIENCE COLLEGE
VALLABH VIDYANAGAR
B. Sc. INTERNAL EXAMINATION- 2017 (IIIrd SEMESTER)
SUBJECT : ORGANIC CHEMISTRY
COURSE CODE : US03CCHE01

DATE : 06-10-2017
DAY : FRIDAY

TIME : 03.00 p.m. TO 4.30 p.m.
TOTAL MARKS : 30

Q. 1 CHOOSE THE CORRECT OPTION FOR FOLLOWING 3

- (i) Which of the following statements is false about enantiomers ?
(a) rotate plane-polarised light (b) are superimposable mirror images
(c) are non- superimposable mirror images (d) have the same melting point.
- (ii) Which of the following compound is not reliable to undergo for Williamson ether synthesis ?
(a) Ethyl bromide (b) Isopropyl bromide (c) n-propyl bromide (d) t-butyl chloride.
- (iii) Which of the following compound is chemoselective reagent ?
(a) 9-BBN (b) P/Cl₂ (c) H₂/Ni (d) Fe/conc.HCl.

Q. 2 ANSWER THE FOLLOWING (ANY TWO) 4

- (i) Staggered conformation of ethane is more stable than eclipsed conformation.
(ii) Give mechanism of acid-catalyzed cleavage of epoxide.
(iii) How can you distinguish 1^o, 2^o and 3^o amines.

Q. 3 ANSWER THE FOLLOWING

- (i) Arrange the stability order of the following conformations of n-butane and explain your answer. 3
(a) Staggered (b) Gauche (c) Eclipsed
- (ii) Cis-1,2-cyclopentane diol cannot be resolved whereas trans-1,2-cyclopentane diol is 3
resolvable.

OR

Q. 3 ANSWER THE FOLLOWING

- (i) Arrange the stability order of the following conformations of cyclohexane and explain your answer. 3
(a) Boat (b) Chair (c) Twist-boat.
- (ii) Justify : A racemic modification is converted by an optically active reagent into a 3
mixture of diastereomers which can be separated..

[P.T.O.]



Q. 4 ANSWER THE FOLLOWING

- (i) Arrange the relative acidity order of following molecules and give detail explanation for your answer. 3
(a) RH (b) R-OH (c) NH₃.
- (ii) Give the synthesis of glycerol from propene via halohydrin formation. 3

OR

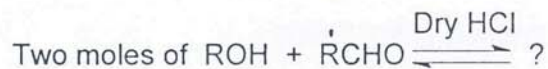
Q. 4 ANSWER THE FOLLOWING

- (i) Justify: Periodic acid is used as powerful tool in structure determination of polyhydroxy alcohols. 3
- (ii) Complete the following reaction and give appropriate detail stepwise mechanism. 3



Q. 5 ANSWER THE FOLLOWING

- (i) Describe the action of nitrous acid on various aliphatic and aromatic amines. 3
- (ii) Complete the following reaction and give appropriate detail stepwise mechanism. 3



OR

Q. 5 ANSWER THE FOLLOWING

- (i) Give appropriate detail stepwise mechanism of Hofmann rearrangement. 3
- (ii) Give the synthesis of p-toluic acid from toluene. 3

THE END

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