

GUJARAT TECHNOLOGICAL UNIVERSITY
B.PHARM - SEMESTER- 3 EXAMINATION – SUMMER -2020

Subject Code: 2230004**Date:29-10-2020****Subject Name: Pharmaceutical Chemistry-IV (Organic Chemistry – I)****Time: 2:30 PM TO 5:30 PM****Total Marks: 80****Instructions:**

1. Attempt any five questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

Q.1	(a) Define hybridization. Explain hybrid orbitals with examples.	06
	(b) Write a note on Molecular Orbital Theory. Differentiate bonding and antibonding orbitals.	05
	(c) Explain electronegativity and polarity of bonds.	05
Q.2	(a) Comment on following:	06
	(i) Trichloroacetic acid is less acidic than acetic acid.	
	(ii) Cyclopentadiene is aromatic.	
	(iii) Dehydration of tertiary alcohol is faster than primary alcohol.	
(b) Write a note on hydrogen bond.	05	
(c) Write a note on hyperconjugation and resonance.	05	
Q.3	(a) Explain in brief factors affecting organic reactions.	06
	(b) Give applications of carbenes and nitrenes.	05
	(c) Write note on reaction of dienes.	05
Q.4	(a) Explain preparation and reaction of Grignard reagent.	06
	(b) Explain synthesis & reaction mechanism on Aldol Condensation.	05
	(c) General methods of preparations of Alkyl halides.	05
Q.5	(a) Differentiate: SN1 and SN2 reactions.	06
	(b) Explain Hydroboration – oxidation reaction of alkene with detailed mechanism.	05
	(c) General methods of preparations of Alcohols.	05
Q. 6	(a) Differentiate: E2 and E1 mechanism of elimination.	06
	(b) Give any three methods of preparations of Naphthalene.	05
	(c) Write a note on Williamson’s synthesis of ether.	05
Q.7	(a) Write reaction with mechanism of nitration of benzene.	06
	(b) What are Friedel craft reactions? Enlist its limitations.	05
	(c) Nitration of nitrobenzene yield m-dinitrobenzene: Justify.	05
