Seat No.: _____ *Enrolment No._____*

GUJARAT TECHNOLOGICAL UNIVERSITY

B. Pharmacy Sem-III Remedial Examination 2010

Subject code: 230003

Subject Name: Pharmaceutical Chemistry-III

Date: 10 / 03 / 2010 **Time: 10.30 am – 01.30 pm**

Instructions: **Total Marks: 80**

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

Q.1 Explain each of the following terms, giving suitable example or structure or equations, wherever possible. **16**

i. Petroleum
ii. Orbital
iii. Alicyclic compound
iv. Hyper conjugation
v. Nitrene
vi. Geometrical isomers
vii. Conformation
viii. Symphoria
ix. Nucleophile
x. Denatured alcohol
xi. Emperical formula

Q.2 Comments on each of the following statements: **16**

i. Pai bond is weaker than sigma bond.
ii. Water is liquid while hydrogen sulfide is gas at room temperature.
iii. Trichloroacetic acid is less acidic than acetic acid.
iv. Ammonia is more basic than aniline.
v. Alkenes undergo electrophilic addition reactions.
vi. Tertiary carbocation is less stable than primary.
vii. Cyclopropane is as reactive as ethylene.
viii. Reactions of alcohols are catalysed by acid.

Q.3 Give any three general methods of preparations of the following : (without mechanism) **16**

i. Alkanes
ii. Alkenes
iii. Alkynes
iv. Alkylhalides
v. Alcohols

Q.4 Give any three chemical reactions of the following: (without mechanism) **16**

i. Ethers
ii. Alkenes
iii. Alkylhalides
iv. Alkynes
v. Alcohols

Q.5 Discuss in detail, giving explanation of each step, mechanism of each of the following reactions : **16**

i. Methane + Chlorine gas $\xrightarrow{\text{U.V.Light}}$ Chloromethane + HCl
ii. 2-Bromobutane $\xrightarrow{\text{alc.KOH}}$ 1-Butene (19%) + 2-Butene (81%)
iii. Propyne + Water $\xrightarrow{\text{Sulfuric acid, Mercurisulfate}}$ Acetone
iv. 1,3-Butadiene +HBr $\xrightarrow{40^{\circ}C}$ 3-Bromo-1-butene (20%) + 1-Bromo 2-butene

Q. 6

A Give structural formula of the following compounds : **09**

i. 2-Ethoxyethanol
ii. Vinylchloride
iii. Diallylether
iv. cis-4-Methyl-2-Pentene
v. Gauche-1,2-Dichloroethane
vi. 2,2,4-Trimethylpentane

B State and explain **07**

i. Merkovnikov's rule
ii. Saytzeff's rule

Q.7 Write detail notes on : **16**

i. Electrocyclic reactions
ii. Intermolecular forces
iii. Hydroboration-Oxidation
iv. Nucleophilic Substitution bimolecular

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