

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

**GUJARAT TECHNOLOGICAL UNIVERSITY**

**B. Pharmacy Sem-III Examination December 2009**

**Subject code: 230003**

**Subject Name: Pharmaceutical Chemistry-III**

**Date: 19 / 12 /2009**

**Time: 12.00 – 3.00 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**
- (a) Write a note on: halogenations of Alkanes **06**
- (b) Define hybridization? Explain  $Sp^2$  hybridization with example. **05**
- (c) Explain Following Terms **05**
- Heterolysis
  - Homolysis
  - Dipole-Dipole interaction
  - Antibonding orbital
  - Steric effect
- Q.2**
- (a) Distinguish the Following **06**
- 1-Hexene and n-Hexane
  - Propene and propane
  - Acetylene and Ethylene
- (b) Describe preparation and synthetic utility of Grignard reagent **05**
- (c) Write a note on Williamson's synthesis of ether. **05**
- Q.3**
- (a) Discuss mechanism of  $SN_1$  and  $SN_2$  reactions of alkyl halides **06**
- (b) Explain the Following **05**
- Carbenes as reaction intermediates
  - Carbocations with mechanism
- (c) Complete the following reactions **05**
- n- Haptane  $\xrightarrow[600^\circ C/10 \text{ atm}]{Pt-Al_2O_3}$
  - Ethene +  $Cl_2 \xrightarrow{?}$
  - n-Butane  $\xrightarrow{?}$  Isobutane.
- Q.4**
- (a) How will you distinguish between primary, secondary and tertiary alcohol. **06**
- (b) Write a note on the following **05**
- Sigmatropic reactions
  - Neighbouring group effects

- (c) Explain dehydration of alcohol with example for supporting its orientation. **05**
- Q.5**
- (a) Give general methods for the preparation of Alkyne and Alkene **06**
- (b) How Hyperconjugation and resonance differ from each other? Discuss with example. **05**
- (c) Give structural formula for the following **05**
1. 2-methoxypentane
  2. N-butyl methyl ether
  3. 2-methyl-2-butene
  4. Vinyl bromide
  5. 1-methoxy-2-propanol
- Q.6**
- (a) Define the following **06**
1. Markonikov's rule
  2. Ozonolysis
  3. Peroxide effect
- (b) Give general methods for the preparation of Alkyl halide **05**
- (c) Give IUPAC name of the following **05**
- 1) 
$$\begin{array}{c} \text{CH}_3 \\ | \\ \text{CH}_3\text{---C---CH}_3 \\ | \\ \text{F} \end{array}$$
- 2) 
$$\begin{array}{cc} \text{CH}_2\text{---CH}_2 & \\ | & | \\ \text{OH} & \text{OH} \end{array}$$
- 3) 
$$\begin{array}{c} \text{CH}_3 \\ | \\ \text{CH}_3\text{---CH}_2\text{---CH---CH}_2\text{---CH}_3 \\ | \\ \text{CH}_3 \end{array}$$
- 4) 
$$\begin{array}{c} \text{OCH}_2\text{---CH}_3 \\ | \\ \text{CH}_3\text{---CH---CH}_2\text{---CH}_3 \end{array}$$
- 5) 
$$\text{CH}_3\text{---CH=CH---CH}_3$$
- Q.7**
- (a) Method of preparation of cycloalkanes. **06**
- (b) Write a note on the following **05**
1. Aldol condensation
  2. Claisen condensation
- (c) An organic substance on analysis was found to contain 10.06 per cent carbon, 0.84 percent hydrogen and 89.10 per cent chlorine. Calculate its empirical formula **05**
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