

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
B. Pharmacy Sem-III Examination-May-2011

Subject code: 230003

Subject Name: Pharmaceutical Chemistry-III

Date: 25/05/2011

Time: 10:30am to 1:30pm

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) Write note on Molecular orbital theory **06**
- (b) Explain bonding and antibonding orbitals **05**
- (c) Write note on preparation and reactions of cycloalkanes **05**
- Q.2**
- (a) Explain Oxidation and pyrolysis of alkanes **06**
- (b) Explain chain reactions **05**
- (c) Write note on chlorofluorocarbons and ozone shield **05**
- Q.3**
- (a) Write note on Intermolecular and Intramolecular forces **06**
- (b) Which of the following would you expect to be ionic and which non-ionic. **05**
Give simple electronic structure for each, showing only valence electrons
(a) CH_2Cl_2 (b) CH_3NH_2 (c) KClO_4 (d) NaOCl (e) ICl
- (c) How might you account for following order of acidity? **05**
 $\text{HClO}_4 > \text{HClO}_2 > \text{HClO}$
- Q.4**
- (a) Write note on carbocations and carboanions **06**
- (b) Explain electrocyclic cycloaddition reaction or sigmatropic reactions **05**
- (c) Explain effect of neighboring group on chemical reaction **05**
- Q.5**
- (a) List out reactions of alkenes and write note on addition of halogen to alkenes **06**
- (b) Differentiate SN_2 and SN_1 reactions **05**
- (c) Explain Elimination reactions (E_2 and E_1) **05**

- Q. 6** (a) Combustion of 5.17 mg of sample gave 10.32 mg of carbon dioxide and 4.23 mg of water. Molecular weight of the compound is 88. Calculate Empirical formula and Molecular formula of the compound **06**
- (b) Are the following names correct according to IUPAC system of nomenclature or not, if not give the correct name. **05**
- (a) 3-pentyne (b) Octanediol (c) 1, 6-Hexanediol
(d) *tert.* Butanol (e) 3-Keto-n-propanol
- (c) Explain Williamson synthesis of ether **05**
- Q.7** (a) Write note on reaction of dienes. **06**
- (b) Explain preparation and reaction of Grignard reagent **05**
- (c) List out reactions of alkyl halides and explain carbylamines reaction **05**
