

GUJARAT TECHNOLOGICAL UNIVERSITY
B. Pharm. – SEMESTER – III • EXAMINATION – SUMMER • 2015

Subject Code: 230003**Date: 17-06-2015****Subject Name: Pharmaceutical Chemistry III****Time: 02:30 pm - 05:30 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) 0.5 g of an organic compound was Kjeldahlized and ammonia evolved was absorbed in 110 ml of semi normal H₂SO₄. The residual acid required 150 ml of 0.25M NaOH solution. Determine the percentage of Nitrogen in the compound. (Atomic weight – N=14). **06**
- (b) Discuss the different types of chemical bonds. **05**
- (c) Discuss the orbital picture of methane and ethane. **05**
- Q.2** (a) An organic substance on analysis was found to contain 20.06% of C, 1.6% H and 166.5% Cl. Calculate the empirical formula. Determine molecular formula if the molecular weight is 239. (Atomic weights – C=12, H=1, Cl=35.5) **06**
- (b) Discuss different types of non bonding intermolecular interactions **05**
- (c) Write a note on electronegativity and polarity. **05**
- Q.3** (a) Discuss with examples ‘Carbocation’ and ‘Carbanion’. **06**
- (b) Write a note on Hyperconjugation and its effect on chemical properties with relevant examples. **05**
- (c) Write a note on delocalized electrons and resonance with appropriate examples. **05**
- Q.4** (a) Discuss mechanism of free radical halogenation of alkanes with examples. **06**
- (b) Write a short note on reaction intermediates- carbenes and nitronium ions. **05**
- (c) Write a note on Williamson synthesis of ether **05**
- Q.5** (a) Discuss the E2 mechanism and evidence in favour of the mechanism. **06**
- (b) Give the general methods of preparations of alcohols. **05**
- (c) Write a short note on pericyclic reactions. **05**
- Q. 6** (a) Discuss SN1 and SN2 reactions reactions with examples. **06**
- (b) Give the structural formulae of the following- 3, 6-dimethyloctene, Vinyl chloride, acetylene, any one simple allene, any one tertiary alcohol. **05**
- (c) Write a short note on Grignards reaction. **05**
- Q. 7** (a) Write a note on ethers and epoxides **06**
- (b) Write a note on ‘Peroxide effect’ in relation to addition of alkyl halides to alkenes **05**
- (c) Write a short note on neighbouring group effects **05**
