

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
B.PHARM – SEMESTER – 3- EXAMINATION –WINTER - 2018**Subject Code: 2230004****Date: 12/12/2018****Subject Name: Pharmaceutical Chemistry-IV (Organic Chemistry - I)****Time: 10:30 AM TO 01:30 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) Write a note on determination of molecular weight of volatile substances. **06**
(b) Discuss bonding and antibonding orbitals in details. **05**
(c) Define carbocation. Discuss the structure and reactions of carbocations **05**
- Q.2** (a) Explain the reactions involving free radical as intermediate. **06**
(b) State and explain : Saytzeff's rule, Antimarcovnikov addition **05**
(c) Give the preparations and reactions of carbenes. **05**
- Q.3** (a) Give structural formula of the following compounds. **06**
1) 2,3- dimethylpentane
2) 2,3-dimethyl-3-hexene
3) 2,2,6,6,7- Pentamethyl octane
4) 4-methyl heptane
5) 3-ethyl -2,4-dimethyl pentane
6) 3-methyl hexane
(b) Write a note on Diels Alder reactions. **05**
(c) Define hybridization? Explain sp^3 hybridization with examples. **05**
- Q.4** (a) Correct if necessary and justify the following statements. **06**
1) Cycloheptatrienylation is aromatic according to Huckle's rule.
2) Dehydration of tertiary alcohol is faster than primary alcohol.
3) Alcohols are having higher boiling point than ether.
4) Benzene undergoes electrophilic substitution reaction.
(b) Differentiate between $E2$ and $E1$ mechanism of elimination with example **05**
(c) Explain the principle of Dumas method and Kjeldahl's method in detail. **05**
- Q.5** (a) Give importance of Grignard reagent in various reactions. **06**
(b) Write detail short notes on Huckel Rule for aromaticity. **05**
(c) Write a note on hydrogen bonding. **05**
- Q. 6** (a) Write a note on Molecular orbital theory **06**
(b) Give the preparation of benzene and anthracene. **05**
(c) Describe the importance of resonance and hyperconjugation in stability and reactivity of molecules. **05**
- Q.7** (a) Write short notes on Haworth synthesis of naphthalene in details. **06**
(b) Explain the mechanism of halogenation for alkane. **05**
(c) Discuss detail mechanisms of aldol condensation **05**
