

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**B.PHARM - SEMESTER- 3 EXAMINATION – SUMMER -2019**

**Subject Code: BP301TP****Date: 28-05-2019****Subject Name: Pharmaceutical Organic Chemistry II****Time: 02:30 PM TO 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) Explain molecular orbital structure and resonance energy of benzene. **06**  
 (b) Explain effect of substituent on acidity of benzoic acid. **05**  
 (c) Notes on Sachse Mohr's theory. **05**
- Q.2** (a) Why benzene undergoes electrophilic substitution reaction? Explain halogenation reaction of benzene with mechanism. **06**  
 (b) Write down important reaction involve in benzoic acid in detail. **05**  
 (c) Discuss about reaction of cyclopropane and cyclobutane. **05**
- Q.3** (a) Notes on Haworth synthesis for naphthalene and Anthracene. **06**  
 (b) Discuss about Coulson and Moffitts modification of cycloalkanes. **05**  
 (c) Write down structure and medicinal use of Anthracene, diphenylmethane triphenylmethane derivatives. **05**
- Q.4** (a) Write a notes on acidity and effect of substituents of phenol. **06**  
 (b) Discuss the molecular orbital structure of naphthalene? **05**  
 (c) What happen when  
     (a) Naphthalene is treated with concentrated sulphuric acid at 165<sup>0</sup>C. **05**  
     (b) Anthracene is treated with sodium dichromate and sulphuric acid.
- Q.5** (a) Write down significance and principle involve in determination of **06**  
     (a) RM value (b) Acetyl value  
     (c) Ester value (d) Iodine value  
 (b) Notes on synthetic use of aryl diazonium salts. **05**  
 (c) Explain **05**  
     (a) Why phenol is more acidic than ethyl alcohol?  
     (b) Why o-nitrophenol is steam volatile whereas p-nitrophenol is not?
- Q. 6** (a) How will you synthesise the following compounds from benzene **06**  
     (a) Benzene hexachloride (b) Ethylbenzene  
     (c) Isopropylbenzene (d) Cyclohexane  
 (b) Write down structure and use of following compounds **05**  
     (a) DDT (b) Saccharin (c) Cresol  
 (c) Notes on inductive group and its directing effect in monosubstituted benzene. **05**
- Q.7** (a) Explain hydrogenation of oil with diagram. Discuss significance and principal of acid value and saponification value. **06**  
 (b) Notes on a Fridel crafts alkylation and acylation of benzene **05**  
 (c) Discuss Bayer's strain theory with suitable examples. **05**