Seat No: _____ Enrollment No: _____

PARUL UNIVERSITY

FACULTY OF PHARMACY

B.Pharm, Winter 2018-19 Examination

Semester: 3 **Date: 10/12/2018**
Subject Code: 08101201 **Time: 10:00am to1:00pm**
Subject Name: Pharmaceutical Chemistry-III (Organic Chemistry-I) **Total Marks: 75**

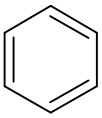
Instructions:
1. Figures to the right indicate full marks.
2. Make suitable assumptions wherever necessary.

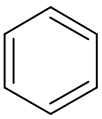
Q.1 Essay type Questions. (Any 2 out of 3) (10 marks each) **(20)**

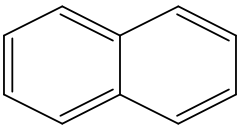
1. Explain aromatic character of benzene with theory of orientation and reactivity.
2. Define Stereochemistry, give a brief account on Chirality & Optical activity and draw the diagram of Polarimeter.
3. Write a short note on hybridization and hybrid orbitals with examples of sp^3 hybridization.

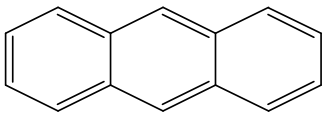
Q.2 Short Essay type Questions. (Any 7 out of 9) (5 marks each) **(35)**

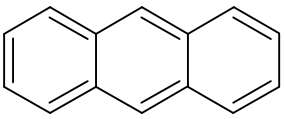
1. **Complete the reactions.**

1.  + H_2SO_4 + HNO_3 ⟶ A

2.  + Cl_2 $\xrightarrow{Fe}$ A

3.  $\xrightarrow{KMnO_4/\ H^+}$ A

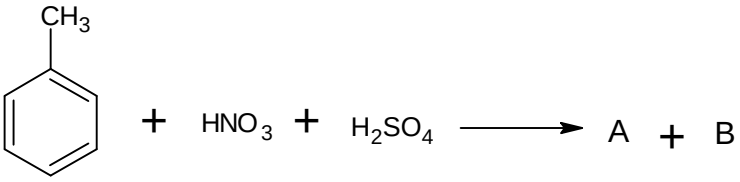
4.  $\xrightarrow{H_2SO_4}$ **A + B**

5.  $\xrightarrow{Na_2Cr_2O_7/H_2SO_4}$ A

2. Give a brief note on Intermolecular and Intramolecular forces.
3. Write a short note on pka value and its significance.
4. Explain: Absolute configuration (R and S)
5. Give a brief note on the structure and stability of Carbocation.
6. Explain various concepts of acid base theory.
7. Write reaction of Fridal crafts alkylation of benzene and explain its mechanism.
8. Write a short note on Racemic mixture and its resolution methods.
9. Explain bonding and antibonding orbitals in brief.

Q.3 Answer in short. (2 marks each) **(20)**

1. Define: 1. Nucleophiles 2. Electrophiles
2. Write Haworth synthesis for preparation of Naphthalene
3. Write down applications of organic chemistry.
4. Define: 1. Electronegativity 2. Bond dissociation energy
5. Write short note on types of catalysis.
6. Define: 1. Carbonium ion 2. Free radical
7. Define: 1. Enantiomers 2. Meso compounds
8. Write reaction for synthesis of Anthracene from Naphaquinone and 1,3- Butadiene.
9. Explain Oxidation reduction of any one functional group.
10. Complete the following reactions:

1. 

2.