B. PHARMACY SECOND YEAR SECOND SEMESTER – 2018 (Old)

PHARMACEUTICAL CHEMISTRY - VII (ADVANCE ORGANIC)

Time : 3 hours **Full Marks 100**

Answer any five questions taking at least two from each group. Answers to all parts of a question should be written in the same place.

Group A

1. (i) Write notes on induced polarizability and dipole moment. [6
(ii) Give structure of each of the following compounds consistent with the NMR spectrum (with explanation):
(a) $C_9H_{11}Br$ [4 + 4

a	quintet	δ 2.15 2 H	b	triplet	δ 2.75 2 H
c	triplet	δ 3.38 2 H	d	singlet	δ 7.22 5 H

(b) C_9H_{10}

a	quintet	δ 2.04 2 H
b	triplet	δ 2.91 4 H
c	singlet	δ 7.17 4 H

(iii) Write a note on Chemical Shift. [6

2. Explain, with examples, the followings with reference to chemical reaction and orbital symmetry: [4x5
(i) Conrotatory and disrotatory motions
(ii) Suprafacial and antarafacial processes
(iii) Antiaromatic
(iv) Antibonding orbital

3. Discuss electronic configuration of the followings: [4x5
(i) Benzene
(ii) 1,3-Butadiene
(iii) Allyl system
(iv) Cyclopentadienyl anion

4. Explain with examples the following notations in stereochemistry: [4 x 5
(i) E and Z
(ii) R and S
(iii) D and L
(iv) + and –

Group B

5. [A] Give detail mechanism of elimination-addition method involved nucleophilic aromatic substitution reaction with suitable example. {10}
[B] Give detail mechanism of Aldol addition and condensation reaction involved in synthesis of α-β unsaturated carbonyl compound with suitable example. {10}

6. [A] Give name and structure of commercially important α-β unsaturated carbonyl compound. {5}
[B] Explain the mechanism involved in electrophilic and nucleophilic addition toward α-β unsaturated carbonyl compound with suitable example. {10}
[C] Write a short note on Michael addition reaction. {5}

7. [A] Deduce the following equation giving reaction condition. {2+2+2+2+2}
a) Oxidation of allyl alcohol by MnO2
b) Oxidation of Propyben
c) β-chloropropione aldehyde acroline
d) Aniline from Chlorobenzene
e) Methyl aniline from bromelain
[B] Write a short note on the following. (ANY TWO) {10}
1- Wurtz-Fittig reaction.
2- Clemmensen reduction
3- Meisenheimer intermediate
4- Benzyne intermediate trapping
5- Synthesis of Warfarin from Perkin reaction