

Roll No. ....

Total No. of Questions : 10]

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**B.Pharmacy (Sem. - 2<sup>nd</sup>)**

**PHARMACEUTICAL CHEMISTRY - III**

**(Organic Chemistry - I)**

**SUBJECT CODE : PHM - 1.2.4 (2k9 Batch)**

**Paper ID : [D0149]**

[Note : Please fill subject code and paper ID on OMR]

**Time : 03 Hours**

**Maximum Marks : 80**

**Instruction to Candidates:**

- 1) Section - A is **Compulsory**.
- 2) Attempt any **Four** questions from Section - B.
- 3) Attempt any **Three** questions from Section - C.

**Section - A**

**Q1)**

**(15 × 2 = 30)**

- a) What are Lewis acids give one example.
- b) Which is stronger acid of following pair and why? Hydronium ion or water.
- c) What is optical purity?
- d) Give two applications of Grignard reagent.
- e) Draw and specify R & S configuration of 3- bromohexane.
- f) What do you understand by racemic modification?
- g) What is dipole moment give example?
- h) What are atomic orbital.
- i) Define bond dissociation energy.
- j) Define melting point.
- k) Define term conformation.
- l) What are nucleophiles. Give two examples.
- m) Define diastereomers with one example.
- n) What are homolytic & heterolytic reaction.
- o) Define Metamerism.

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**Section - B**

(4 × 5 = 20)

- Q2)** Explain the Huckel  $4n+2$  rule with examples and draw its significance.
- Q3)** Give mechanism of reaction of different types of organometallic compounds with alkyl halides.
- Q4)** Discuss mechanism of hydroboration oxidation.
- Q5)** Discuss effect of solvent on  $SN^2$  vs  $SN^1$  reaction giving example.
- Q6)** Differentiate between stereoselective and stereospecific reaction with example.

**Section - C**

(3 × 10 = 30)

- Q7)** Explain why benzene undergo electrophilic substitution whereas alkene undergoes addition reaction.
- Q8)** Write note on the following:  
(a) Chlorofluorocarbons and their threat to life on earth.  
(b) Phase transfer catalysis.
- Q9)** Define the terms- carbocation, carbonium and carbenium ion. What are different type of reactions of carbocations studied by you so far. Give suitable example.
- Q10)** How do you account for the observations that aldehydes and ketones undergo nucleophilic addition to carbonyl group whereas acyl derivatives undergo nucleophilic substitution.

