B. Ph 2nd Sem (ASTH) 06-06-14 (Reg)

Total No. of printed pages = 4

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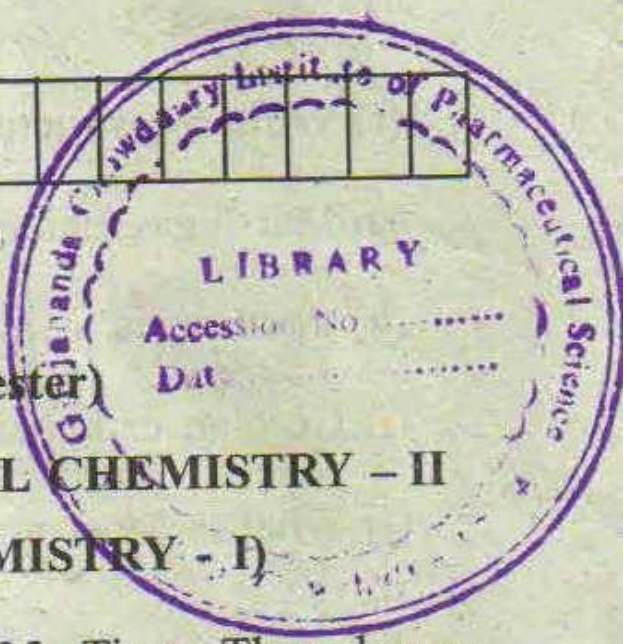
Roll No. of candidate



2014

(Even Semester)

PHARMACEUTICAL CHEMISTRY – II

(ORGANIC CHEMISTRY - I)

Full Marks-100 Pass Marks-35 Time -Three hours

The figures in the margin indicate full marks for the questions.

Answer *all* the questions.

1. Answer / choose the correct option / fill up the blanks of the following questions : 1×10=10

   (a) Define racemic mixture.

   (b) Benzene is also known as 1, 2-dehydrobenzene. (True / False)

   (c) Carbon atoms involved in the double bond of an alkene are _____ hybridized.

[Turn over

(d) What is polar bond ?

(e) Why ethers should never be evaporated to dryness ?

(f) Write the structure of alpha naphthol.

(g) Marsh gas mainly contains methane / ethylene.

(h) Positron is a stable particle. (Yes / No).

(i) Give an example of vicinal dihalide.

(j) What is Markovnikoff orientation ?

2. Answer any *ten* questions : 4×10=40

(a) Explain the terms : Dipole-dipole interaction and Sigma bond.

(b) Explain why the boiling point of ethyl alcohol is higher than that of diethyl ether though they have the same molecular weight.

(c) Complete the following reactions :

$3\ HC \equiv CH \xrightarrow{\text{Iron tube / 400°C}} ?$

$HC \equiv CH + H_2 \xrightarrow{Pd,\ BaSO_4 \text{ / Quinolone}} ?$

(d) Write a note on Ozonolysis of alkene with mechanism.

(e) What do you mean by "bonding" and "antibonding" ?

(f) How will you distinguish between chlorobenzene and benzyl chloride ?

(g) Briefly discuss about RS configuration.

(h) What are the conditions for geometrical and optical isomerism ?

(i) Write the features related to "Oxidation of alcohols".

(j) Discuss the sequence rule.

(k) Write a note on diazocoupling reaction of benzene.

(l) Discuss the Williamson synthesis for ether.

3. Answer the following broad answer type questions (any *five*) : 5×10=50

(a) Write details about the Sp2 and Sp3 hybridization with suitable example.

(b) Draw the importance of Stereospecific and Stereoselective reactions in pharmaceutical chemistry.

(c) Distinguish between SN^2 reaction and SN^1 reaction.

(d) Discuss the molecular orbital structure of benzene and enumerate the important electrophilic substitution reactions of benzene.

(e) Describe the preparation and properties of three characterized alkyl halides with equation and mechanism.

(f) Draw the mechanism of reactions for alkanes of at least three types of reaction at your choice.

(g) Classify the alicyclic compounds with suitable structures and describe the stereochemistry of cyclohexane.