## PHARMACEUTICAL CHEMISTRY ( ORGANIC CHEMISTRY) (SEMESTER-2)

CS/B.Pharm(N)/SEM-2/PT-204/09

1. $\qquad$
Signature of Invigilator

2. 

Signature of the Officer-in-Charge Reg. No.


Roll No. of the Candidate


CS / B.Pharm(N)/SEM-2 /PT-204 /09
ENGINEERING \& MANAGEMENT EXAMINATIONS, JUNE - 2009 PHARMACEUTICAL CHEMISTRY ( ORGANIC CHEMISTRY) (SEMESTER-2)

## INSTRUCTIONS TO THE CANDIDATES :

1. This Booklet is a Question-cum-Answer Booklet. The Booklet consists of $\mathbf{3 2}$ pages. The questions of this concerned subject commence from Page No. 3.
2. a) In Group - A, Questions are of Multiple Choice type. You have to write the correct choice in the box provided against each question.
b) For Groups - B \& C you have to answer the questions in the space provided marked 'Answer Sheet'. Questions of Group - B are Short answer type. Questions of Group - C are Long answer type. Write on both sides of the paper.
3. Fill in your Roll No. in the box provided as in your Admit Card before answering the questions.
4. Read the instructions given inside carefully before answering.
5. You should not forget to write the corresponding question numbers while answering.
6. Do not write your name or put any special mark in the booklet that may disclose your identity, which will render you liable to disqualification. Any candidate found copying will be subject to Disciplinary Action under the relevant rules.
7. Use of Mobile Phone and Programmable Calculator is totally prohibited in the examination hall.
8. You should return the booklet to the invigilator at the end of the examination and should not take any page of this booklet with you outside the examination hall, which will lead to disqualification.
9. Rough work, if necessary is to be done in this booklet only and cross it through.

No additional sheets are to be used and no loose paper will be provided
F FOR OFFICE USE / EVALUATION ONLY
Marks Obtained

| Guestion |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Gumber <br> Number |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Total <br> Marks | Examiner's <br> Signature |
| Marks <br> Obtained |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Head-Examiner/Co-Ordinator/Scrutineer

 PHARMACEUTICAL CHEMISTRY (ORGANIC®HEMISTRY ) SEMESTER - 2

Time : 3 Hours ]


## GROUP - A <br> ( Multiple Choice Type Guestions )

1. Choose the correct alternatives for any ten of the following :
i) Which of the following chemical compounds show geometrical isomerism ?
a) Alkanes
b) Alkenes
c) Alcohols
d) Alkyl halides.
$\square$
ii) Racemic mixture is
a) optically inactive
b) a mixture of unequal parts of enantiomers
c) a mixture of equal parts of enantiomers
d) none of these.
iii) Lucas reagent is
a) $\mathrm{HCl} / \mathrm{NaNO}_{2}$
b) $\quad \mathrm{H}_{2} / \mathrm{Pd}$
c) $\mathrm{HCl} / \mathrm{ZnCl}_{2}$
d) $\mathrm{HCl} / \mathrm{ZnCl}_{2} / \mathrm{BaSO}_{4}$.
$\square$
iv) Hydrolysis of Grignard reagent results in the formation of
a) Alkane
b) Alkene
c) Alkyne
d) Alcohol.
$\square$
v) Which of the following reactions can be used to preparemalkanes?
a) Corey House synthesis
b) Williamson synthesis
c) Friedel-Crafts reaction
d) None of these.
vi) Which of the following compounds is most polar ?
a) Chloro acetic acid
b) Glacial acetic acid
c) Ethyl acetate
d) Periodic acid.
vii) Ethyl alcohol can react with concentrated $\mathrm{H}_{2} \mathrm{SO}_{4}$ to give
a) Ethylene
b) Diethyl ether
c) Ethyl Hydrogen Sulphate
d) All of these.
$\square$
viii) Tollen's reagent is unreactive with
a) Aldehydes
b) Ketones
c) Both (a) and (b)
d) None of these.
ix) 1-Butene-3 yne has
a) $\operatorname{six} \sigma$ and four $\pi$ bonds
b) $\operatorname{seven} \sigma$ and three $\pi$ bonds
c) eight $\sigma$ and two $\pi$ bonds
d) nine $\sigma$ and nine $\pi$ bonds.
$\square$
x) Which of the following compounds is most acidic ?
a) Phenol
b) m-cresol
c) m-nitrophenol
d) $m$-bromophenol.
$\square$
xi) A meso compound
a) is an achiral molecule which contains chiral carbonfiesh
b) contains a plane of symmetry or a centre of symmetry
c) is optically active
d) is characterised by all of these.
xii) In C-C, there is
a) $s p^{3}$ hybridization
b) $\quad s p$ hybridization
c) $s p^{2}$ hybridization
d) no hybridization.

$$
\begin{aligned}
& \quad \text { GROUP - B } \\
& \text { (Short Answer Type Questions ) } \\
& \text { Answer any three of the following. }
\end{aligned}
$$

2. Why is phenol more acidic than alcohol ?
3. Explain why alcohols have much higher boiling points than those of corresponding alkanes.
4. Describe the $s p^{2} \& s p^{3}$ hybridization of Nitrogen with example.
5. Describe the ozonolysis of alkenes.
6. Differentiate between bonding and anti bonding.

# 6 <br> GROUP - C <br> ( Long Answer Type Questions ) <br> Answer any three of the following. <br>  <br> remus, in em 

7. Carry out any five of the following conversions :
a) 2-Butene to acetaldehyde
b) 1-Propanol to 2-Propanol
c) Secondary alcohol to tertiary alcohol
d) Methanol to acetylene
e) Carbon disulphide to benzene
f) Methane to propene.
8. a) What is Isomerism ? Classify with example.
b) Explain any three of the following :
i) R.S. system for asymmetric molecule
ii) Walden inversion
iii) Enantiomers and diastereomers
iv) Chirality and optical Isomers.
9. a) Define hybridization and describe three hybridized states of carbon.
b) Illustrate the formation of sigma bond and pi bond.
c) Differentiate between bond energy and bond dissociation energy with example. 4

## CS /B.Pharm(N) /SEM-2 /PT-204 /09

10. Describe $S N^{1}, S N^{2}$ and $E^{1}, E^{7}{ }^{2}$ reactions in detail..nWrite a note on electronegativity. Explain molecular and atomic orbitals.


$$
7+3+5
$$

11. Describe the preparation of alkane and chemical properties of alkane. Explain Markonikov rule and Anti-Markonikov rule. What is diene?
$7+6+2$

END

