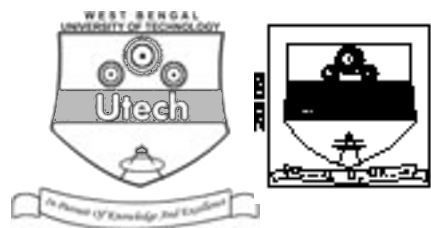


**PHARMACEUTICAL CHEMISTRY ( Organic Chemistry ) ( SEMESTER - 2 )**

**CS/B.PHARM (OLD)/SEM-2/PT-204/09**



1. ....  
Signature of Invigilator

2. ....  
Signature of the Officer-in-Charge

**Reg. No.**

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

**Roll No. of the Candidate**

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

**CS/B.PHARM (OLD)/SEM-2/PT-204/09**

**ENGINEERING & MANAGEMENT EXAMINATIONS, JUNE – 2009**

**PHARMACEUTICAL CHEMISTRY ( Organic Chemistry ) ( SEMESTER - 2 )**

Time : 3 Hours ]

[ Full Marks : 70

**INSTRUCTIONS TO THE CANDIDATES :**

- This Booklet is a Question-cum-Answer Booklet. The Booklet consists of **32 pages**. The questions of this concerned subject commence from Page No. 3.
- In **Group – A**, Questions are of Multiple Choice type. You have to write the correct choice in the box provided **against each question**.
  - 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.
- Fill in your Roll No. in the box** provided as in your Admit Card before answering the questions.
- Read the instructions given inside carefully before answering.
- You should not forget to write the corresponding question numbers while answering.
- 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.
- Use of Mobile Phone and Programmable Calculator is totally prohibited in the examination hall.**
- 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**.
- 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**

**FOR OFFICE USE / EVALUATION ONLY**

Marks Obtained

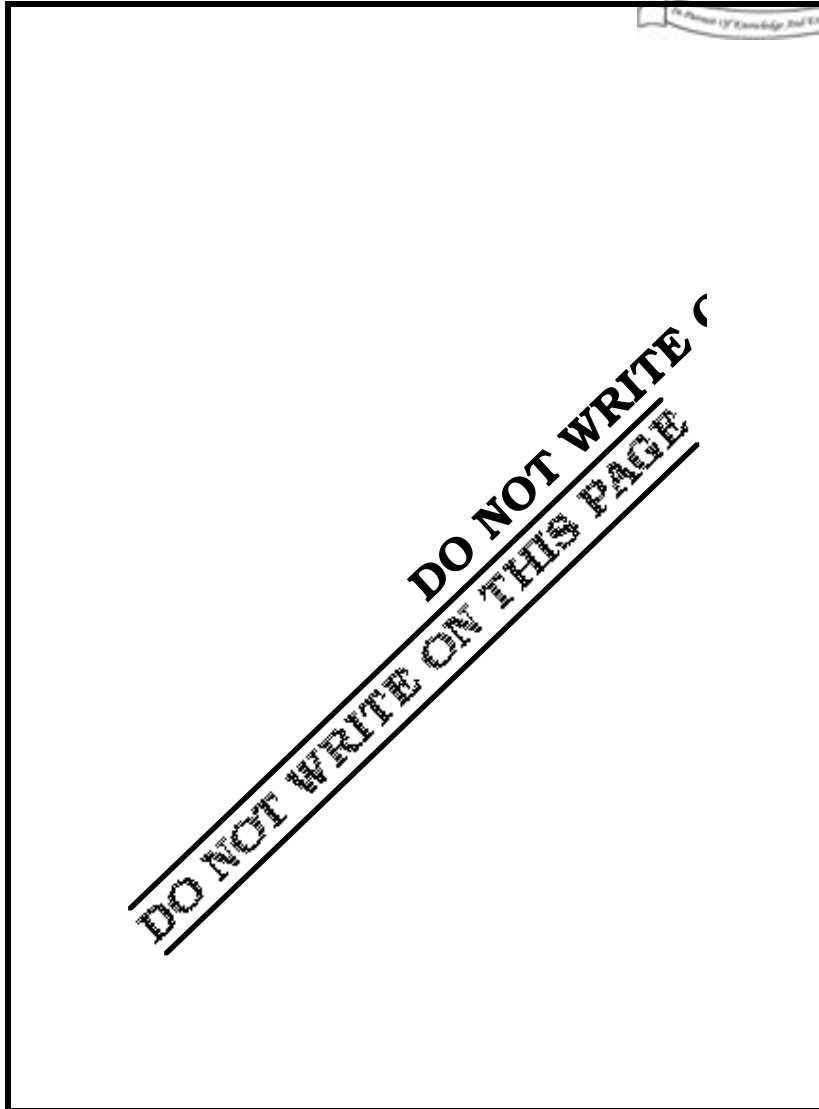
Question Number	Group – A					Group – B					Group – C					Total Marks	Examiner's Signature
Marks Obtained																	

.....  
**Head-Examiner/Co-Ordinator/Scrutineer**

**2298 (09/06) (O)**



*In Pursuit Of Knowledge And Excellence*



<http://www.makaut.com/>

2298 (09/06) (O)

<http://www.makaut.com/>



**ENGINEERING & MANAGEMENT EXAMINATIONS, JUNE – 2009**  
**PHARMACEUTICAL CHEMISTRY ( Organic Chemistry )**  
**SEMESTER - 2**



Time : 3 Hours ]

[ Full Marks : 70

**GROUP – A****( Multiple Choice Type Questions )**1. Choose the correct alternatives for any *ten* of the following : 10 × 1 = 10i) In  $-C \equiv C-$ , the type of hybridization isa)  $sp^3$ b)  $sp^2$ c)  $sp$ d) no hybridization. 

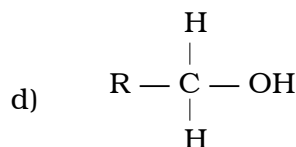
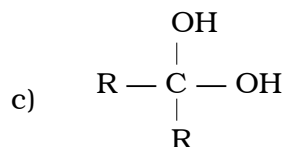
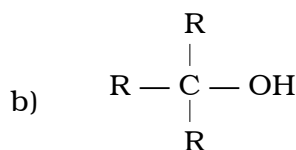
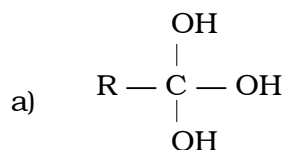
ii) Hydrolysis of esters take place in the presence of

a)  $H_2SO_4$ b)  $CH_3COOH$ 

c) both of these

d) none of these. 

iii) Which one is a tertiary alcohol ?



iv) Which one is a conjugated diene ?

a)  $C=C-C=C$ b)  $C-C=C-C$ c)  $C=C-C-C=C$ d)  $C=C=C$ . **2298 (09/06) (O)**



4

v) The number of stereoisomers for a compound with  $n$  distinct asymmetric carbon atoms is

a)  $2^{n-1}$

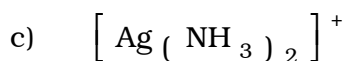
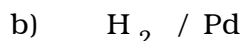
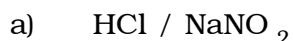
b)  $2^{2n}$

c)  $2^{n/2}$

d)  $2^n$

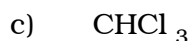
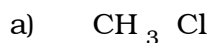



vi) Tollen's Reagent is



d) none of these.

vii) Which of the following has a zero dipole moment ?




viii) When ethylene is treated with oxygen in presence of silver catalyst at  $280^\circ - 400^\circ\text{C}$  then the product formed is




ix) Organic compounds must contain

a) oxygen

b) nitrogen

c) hydrogen

d) carbon.

x) Which molecule has a single pi bond ?

a) Benzene

b) Propene

c) Propane

d) Propyne.

xi) Which organic molecule undergoes resonance ?

a) Ethanol

b) Methane

c) Benzene

d) Propyne.

xii) In crude petroleum, fractions can be separated according to their differing boiling points by

a) the contact process

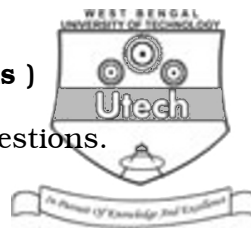
b) catalytic isomerization

c) fractional distillation

d) cracking.



5

**GROUP – B****( Short Answer Type Questions )**Answer any *three* of the following questions.

3 × 5 = 15

2. Compare electromeric effect and inductive effect.
3. Write briefly about Enantiomerism and Diastereomerism.
4. a) Explain why dipole moment of  $\text{NH}_3$  is greater than that of  $\text{NF}_3$  .
- b) Boiling points of normal straight chain alkanes are higher than those of their branched chain isomers. Explain.  $2 \frac{1}{2} + 2 \frac{1}{2}$
5. What happens when ( any *two* of the following ) —  $2 \times 2 \frac{1}{2}$
- a) 1, 2-dichloropropane is heated with zinc dust and ethanol ?
- b) Phenol is treated with chloroform in presence of aqueous sodium hydroxide ?
- c) Naphthalene is treated with potassium permanganate in acidic medium ?
6. The C – C bond length is maximum in alkane then in alkene and minimum in alkyne. Explain.

**GROUP – C****( Long Answer Type Questions )**Answer any *three* of the following questions.

3 × 15 = 45

7. a) Write two methods of preparation of carbonyl compounds. 4
- b) Discuss the acidity of the  $\alpha$ -hydrogen of carbonyl compounds. 2
- c) Write down the Industrial method of preparation of acetone. 3
- d) Explain the 2, 4-DNP test for carbonyl compounds. 2
- e) Compare aldehydes and ketones. 4
8. a) Write the geometry of atomic orbitals. 5
- b) Discuss about bonding and antibonding orbitals. 4
- c) Compare atomic and molecular atoms. 4
- d) Write short note on hydrogen bonding. 2

2298 (09/06) (O)



9. a) Explain Markonikov rule, Anti-Markonikov rule and Saytzeff rule. 6
- b) Write three general methods of preparation of alkanes. 5
- c) Discuss the bromination and nitration of benzene. 4
10. a) Classify amines with suitable examples. 2
- b) How will you separate a mixture of different classes of amines ? Describe any one method. 5
- c) Arrange the following compounds in order of basicity and justify : 3
- i) Methyl amine
- ii) Dimethyl amine
- iii) Trimethyl amine.
- d) Describe the method of preparation of amine by Gabriel's phthalimide synthesis. 5
11. a) Explain the important physico-chemical evidences based on which the structure of naphthalene was established. 8
- b) How will you synthesize phenanthrene by Haworth's method ? 5
- c) Write down all possible resonating structures of anthracene. 2
12. a) What is isomerism ? Classify with examples. 4
- b) Explain any *three* of the following : 3 × 3
- i) Geometrical isomerism and optical isomerism
- ii) Enantiomers and Diastereomers
- iii) Racemic mixture and Meso-compound
- iv) Dissymmetric molecule and Asymmetric molecule.
- c) What is the minimum requirement for alkenes to show geometrical isomerism ? 2

---

END