

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

2293 (09/06)

<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 = 10

i) Which of the following chemical compounds show geometrical isomerism ?

a) Alkanes

b) Alkenes

c) Alcohols

d) Alkyl halides.

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) HCl/NaNO₂b) H₂ / Pdc) HCl/ZnCl₂d) HCl/ZnCl₂ / BaSO₄.

iv) Hydrolysis of Grignard reagent results in the formation of

a) Alkane

b) Alkene

c) Alkyne

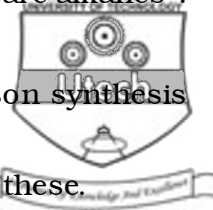
d) Alcohol.

2293 (09/06)



v) Which of the following reactions can be used to prepare alkanes ?

- 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 H_2SO_4 to give

- a) Ethylene b) Diethyl ether
c) Ethyl Hydrogen Sulphate d) All of these.

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) six σ and four π bonds b) seven σ and three π bonds
c) eight σ and two π bonds d) nine σ and nine π bonds.

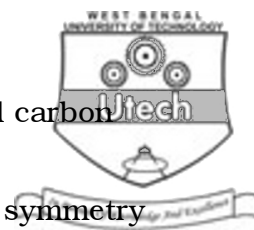
x) Which of the following compounds is most acidic ?

- a) Phenol b) *m*-cresol
c) *m*-nitrophenol d) *m*-bromophenol.



xi) A meso compound

- a) is an achiral molecule which contains chiral carbon
- 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) sp^3 hybridization
- b) sp hybridization
- c) sp^2 hybridization
- d) no hybridization.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following.

3 × 5 = 15

- Why is phenol more acidic than alcohol ?
- Explain why alcohols have much higher boiling points than those of corresponding alkanes.
- Describe the sp^2 & sp^3 hybridization of Nitrogen with example.
- Describe the ozonolysis of alkenes.
- Differentiate between bonding and anti bonding.

2293 (09/06)



6

GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following.



3 × 15 = 45

7. Carry out any *five* of the following conversions :

5 × 3 = 15

- 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.

6

b) Explain any *three* of the following :

3 × 3 = 9

- 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.

6

b) Illustrate the formation of sigma bond and pi bond.

5

c) Differentiate between bond energy and bond dissociation energy with example. 4

2293 (09/06)



10. Describe SN^1 , SN^2 and E^1 , E^2 reactions in detail. Write 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