

Roll No.

Total No. of Questions : 10]

[Total No. of Printed Pages : 4]

1.2.4

Pharmaceutical Chemistry—III

(Organic Chemistry—I)

(B. Pharmacy, 2nd Semester, 2063)

Time : 3 Hours]

[Maximum Marks : 80

Note :- Section A is compulsory. Attempt *Four* questions from Section B and any *Three* questions from Section C.

Section-A

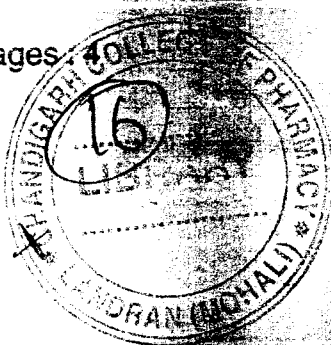
Marks : 30

1. (i) Define Aufbau Principle.
- (ii) PCl_5 dissociates to give PCl_3 . Why ?
- (iii) Discuss conformational isomerism.
- (iv) Write note on carbenes.
- (v) What do you mean by R and S configurations ?
- (vi) Name the α -orbitals involved in :
 - (a) Sp^3d hybridisation, and
 - (b) Sp^3d^2 hybridisation.
- (vii) Explain Markownikov's rule.

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U-4

Turn Over



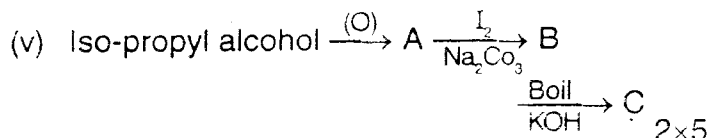
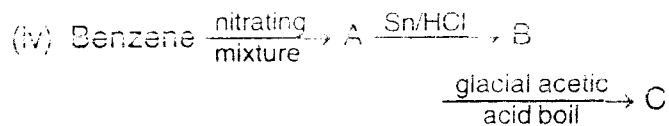
- (d) Give the requirements of a compound showing optical activity.
- (e) Explain why trimethylamine is less basic than di-methylamine.
- (f) Write down the structural formula of all the compounds which possess formula $C_5H_{12}O$.
- (g) Write the structural formula for each of the following compounds :
- 3-Ethyl - 2 - methyl - pentane
 - 1, 3 - Butadiene
- (h) Define and classify structural Isomerism.
- Explain briefly why chloroacetic acid is a stronger acid than acetic acid.
 - For the following point out the correct orienting nature of each group when present in an aromatic nucleus :
 - Br
 - COOH
 - OH
 - C_2H_5

- (k) Draw the structure of a compound containing sp^3 hybridized carbon.
- (l) Define :
- (i) Carbocation
 - (ii) Carbanion
- (m) What do you understand by bond length and bond energy ?
- (n) How does di-ethyl ether react with :
- (i) Cl_2 in dark
 - (ii) Hot concentrated HI.
- (o) What do you understand by racemic mixture ? Give suitable example.

Section-B Marks : 5 Each

2. Discuss the mechanism of chlorination of an Alkane.
3. Discuss giving example, the effect of substituent on the strength of Aliphatic Carboxylic acid.
4. What is Markovnikov's Rule ? Explain it giving the mechanism.
5. How do you define the term acid-derivatives ? Write the class names and general formulae giving one example in each of the cases.

Turn Over



8. Explain the following :

- Sandmeyer Reaction
- Williamson Synthesis
- Fittig's Reaction
- Benzoin condensation
- Metamerism. 2×5

9. How will you convert :

- Acetaldehyde to Lactic acid
- Toluene to benzene
- Acetylene to Acetic acid
- Oxalic acid to Cyanogen
- Ethylalcohol to Methane. 2×5

10. (a) Explain Resonance. 3

(b) Write structural formulae and IUPAC names of various structural isomers having the molecular formula C_5H_{12} . 3

(c) How would you convert naphthalene into 2-nitronaphthalene? 2

(d) What do you mean by E & Z configurations? 2

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