

**B. Pharm. (Second Semester) (C.B.S.) Examination**  
**PHARMACEUTICAL CHEMISTRY—II (2T2)**  
**(Organic)**  
**Paper—2**

Time—Three Hours]

[Full Marks—80

- N.B. :—** (1) Question No. 1 is compulsory.  
(2) Solve any **FOUR** questions from the remaining.  
(3) Draw neat labeled diagram wherever necessary.

1. Solve any **FIVE** of the following :
- (a) Give sources of organic compounds with examples.
  - (b) Write a short note on sequence rule.
  - (c) Cis-trans isomerism.
  - (d) Explain role of electronegativity in polarity of bond.
  - (e) Define and classify amines with examples.
  - (f) Define hybridization and classify them.
  - (g) Differentiate between Configuration and Conformation.

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2. (a) What are racemic mixtures ? Explain various methods of resolution of racemic mixture. 8

(b) Explain Dumas method for determination of Nitrogen. 7

3. Justify the following statements (any **THREE**) :

(a) Acetic acid is acidic in nature.

(b) Melting point of inorganic compound is higher than organic compound.

(c) Trans-isomers are more stable than cis-isomers.

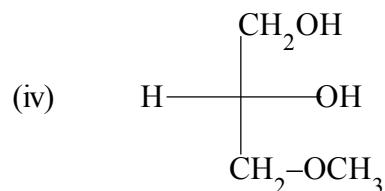
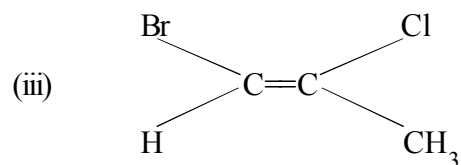
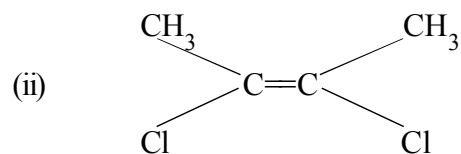
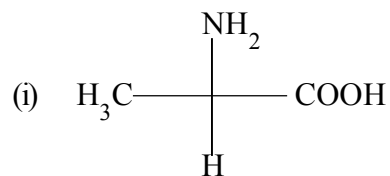
(d) Chair conformation of cyclohexane is more stable than boat. 15

4. (a) What is meant by conformers ? Discuss various conformations existing in n-butane along with energy profile diagram. 8

(b) Explain Lassaignes test for detection of elements in organic compounds. 7

5. (a) Give brief account on hydrogen bonding and explain its effect on aqueous solubility and bond lengths. 9

(b) Assign suitable configuration to following organic compounds (any **THREE**) :



6

6. (a) Define and classify alcohols with suitable examples. How is differentiation between primary, secondary and tertiary alcohols carried out ? 9

(b) Draw structure of following compounds (any **THREE**) :

(i) 1, 3, 5-tribromo benzene

(ii) 2-cyclopenten-1-ol

(iii) Ethyl, methyl amine

(iv) 3-chloro butanal. 6

7. (a) What is meant by optical activity ? Explain conditions for optical activity. What is meant by specific rotation and how can one measure it ? 8

(b) Explain various types of organic reactions with an example from each class. 7