

B.Pharm. (CBCS Pattern) Semester-IV
BP401T - Pharmaceutical Organic Chemistry-III

P. Pages : 3

Time : Three Hours



GUG/W/24/11990

Max. Marks : 75

- Notes :
1. All questions are compulsory.
 2. All questions carry equal marks.
 3. Illustrate your answers wherever necessary with the help of neat sketches.

1. Multiple Choice Questions.

20x1

=20

- i) It is possible to distinguish between optical isomers
 - a) By using chemical test
 - b) By mass spectroscopy
 - c) By IR spectroscopy
 - d) By polarimetry
- ii) A molecule is said to be chiral
 - a) If it contains plane of symmetry Have the same melting point
 - b) If it contains center of symmetry
 - c) If it cannot be superimposed on its mirror image
 - d) If it can be superimposed on its mirror images
- iii) Which of the following compounds exist as cis-trans isomers?
 - a) 1-Butene
 - b) 2-Butene
 - c) Cyclopropane
 - d) Acetone
- iv) Which of the following represent as racemic mixture
 - a) 75% (R)-2 Butanol, 25% (S)-2- Butanol
 - b) 25% (R)-2 Butanol, 75% (S)-2- Butanol
 - c) 50% (R)-2 Butanol, 50% (S)-2- Butanol
 - d) None of the above
- v) Which of the following conformation has highest stability
 - a) Partially eclipsed
 - b) fully eclipsed
 - c) staggered
 - d) gauche
- vi) In thiazole and oxazole nucleophile and electrophile attacks at
 - a) C₁ and C₂ respectively
 - b) C₂ and C₃ respectively
 - c) C₂ and C₅ respectively
 - d) C₁ and C₅ respectively
- vii) The N atom in pyridine is _____
 - a) SP³ hybridized
 - b) SP² hybridized
 - c) SP hybridized
 - d) Cannot be predicted
- viii) When a mixture of furan and ammonia is passed over heated alumina at 753K
 - a) Pyrrole is obtained
 - b) Furfural is obtained
 - c) Thiophene is obtained
 - d) Pyrazole is obtained

xx) Compounds with same molecular formula but different structural formula are called-

- | | |
|--------------|--------------------|
| a) Alkoxides | b) Iso compounds |
| c) Isomers | d) Ortho compounds |

2. Solve any two.

**2x10
=20**

- a) What are heterocyclic compounds? Classify them and explain Hantzsch-Widman nomenclature.
- b) What are conformational isomerism? Write conformation of n-butane.
- c) Write in detail about Beckmann rearrangement and Schmidt rearrangement.

3. Solve any seven.

**7x5
=35**

- a) Write reactions of thiophene.
- b) Write in detail electrophilic substitution reactions and medicinal uses of furan.
- c) Write a note on Elements of symmetry and Chiral, achiral molecule.
- d) Discuss about birch reduction.
- e) Discuss about stereoisomerism in biphenyl compounds and conditions for optical activity.
- f) Outline the Skraup synthesis.
- g) Define geometrical isomerism and also give methods of determination of configuration of geometrical isomerism.
- h) Outline the synthesis of indole.
- i) Define stereoisomerism. Give the difference between enantiomers and diastereomers.
