B. Pharm. (CBCS Pattern) Semester-IV

BP401T - Pharmaceutical Organic Chemistry-III

P. Pages : 3 **GUG/S/25/11990**

Time : Three Hours * 1 7 9 6 * Max. Marks : 75

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

1. Multiple Choice Questions. **1x20 =20**

1) Which of the following is weakest base-
   a) Pyridine b) Pyrrole
   c) Pyrimidine d) None of the above

2) Beckmann rearrangement is useful for the synthesis of-
   a) Alcohols b) Amide
   c) Phenols d) Oximes

3) Electrophilic substitution reaction in pyrrole occurs at-
   a) C_3 atom b) C_2 atom
   c) Both C_2 & C_3 atoms d) None of above

4) Which of the following compounds exhibit geometrical isomerism.
   a) 1-pentene b) 2-methyl 2-butene
   c) 2-pentene d) 2-methyl 2-pentene

5) Identify the five member heterocycles with nitrogen and oxygen atom.
   a) Imidazole b) Thiazole
   c) Oxazole d) Pyrrole

6) Which of the following may exist as cis-trans isomers?
   a) 1-Butene b) 2-Butene
   c) Cyclopropane d) Acetone

7) Furan on sulphonation in presence of pyridine gives-
   a) Furan 2-sulphonic acid b) Furan 3-sulphonic acid
   c) Furan 4-sulphonic acid d) None of the above

8) Which of the following is fused heterocyclic ring?
   a) Pyrrole b) Quinoline
   c) Acridine d) Both b & c

9) Which conformer of ethane has maximum energy?
   a) Skew b) Eclipsed
   c) Staggered d) All have equal energy

10) The molecular formula for pyrrole is-
   a) C_3H_3NH b) C_4H_5N
   c) C_3H_4N d) C_4H_6N

11) Alkenes shows geometrical isomerism due to-
   a) Asymmetry
   b) Rotation around a single bond
   c) Resonance
   d) Restricted rotation around a double bond

12) In Dakin reaction the $-OH / NH_2$ group must be present at either which of the reactant.
   a) Ortho position
   b) Meta position
   c) Para position
   d) Both a & c

13) Nucleophilic atlack on pyridine ring occurs preferably at-
   a) Position 1 of pyridine ring
   b) Position 2 of pyridine ring
   c) Position 3 of pyridine ring
   d) Position 4 of pyridine ring

14) In acridine which of the following catalyst causes reduction of benzene.
   a) $2n / HCl$
   b) Pt / HCl
   c) $LiAlH_4$
   d) Both a & c

15) -------- reaction involves addition of hydrazoic acid to carboxylic acids, aldehydes, ketones and alcohols and olefins.
   a) Schmidt reaction
   b) Dakin reaction
   c) Birch reduction
   d) None of the above

16) Claisen-Schmidt condensation reaction is useful for synthesis of-
   a) Acetamide
   b) Chalcones
   c) Phenols
   d) Alcohols

17) Which of the following is strong hydride donor.
   a) $Na\,BH_4$
   b) $LiAlH_4$
   c) B_2H_2
   d) None of above

18) 2-Butanol is optically active because it contains-
   a) An asymmetric carbon
   b) A plane of symmetry
   c) A hydroxyl group
   d) A centre of symmetry

19) In iso-quinoline electrophilic substitution reaction occurs at-
   a) Position 5 only
   b) Position 5 & 8
   c) Position 5 & 7
   d) Position 4 only

20) Plane polarized light is affected by-
   a) Identical molecules
   b) All polymers
   c) Chiral molecule
   d) All biomolecules

2. Solve **any two.** **2x10 =20**

i) Write about Schmidt rearrangement & Beckmann rearrangement.

ii) Write a short note on pyrrole.

iii) What are geometrical isomerism? What are the methods for determination of configuration of geometrical isomerism.

3. Solve **any seven.** **7x5 =35**

i) Define conformational isomerism. Write conformation of cyclohexane.

ii) Write a note on racemic mixture.

iii) What are optical isomerism? Give the difference between enantiomers and diastereomers.

iv) Write a note on Wolff Kishner reduction.

v) Write structure, electrophilic substitution reaction & medicinal uses of thiophene.

vi) Define heterocyclic compounds. Also give their nomenclature.

vii) Write in detail about Dakin reaction.

viii) Write structure & synthesis of quinoline.

ix) Write structure & medicinal uses of **any two.**

i) Pyrazole b) iso-quinoline

iii) Acridine

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