

B.Pharm. (CBCS Pattern) Semester - IV
BP401T / 1 - Pharmaceutical Organic Chemistry-III

P. Pages : 3

Time : Three Hours



GUG/S/23/11990

Max. Marks : 75

- Notes :
1. All questions are compulsory.
 2. Diagrams and Chemical equation should be given wherever necessary.

1. Multiple choices questions

**20x1
=20**

- Reaction of imidazole with HN03/H2S04 gives following products.
 - 2-nitroimidazole
 - 4-nitroimidazole
 - 1-nitroimidazole
 - All
- Diastereomers are not mirror images of each other
 - True
 - False
- The hormone cortisone contain the steroid core as
 - Estrane
 - Androstane
 - Cholestane
 - Pregnane
- Resolution of racemic mixture can be carried out by ----- methods
 - Chemical
 - Biochemical
 - Physical
 - All of these
- Isomers which are non-superimposable mirror images of each other are enantiomers
 - True
 - False
- Molecules which have elements of symmetry are optically active
 - True
 - False
- R represent ----- absolute configuration.
 - clockwise
 - anti-clockwise
 - both
 - none of these
- D and L represents -----
 - Absolute configuration
 - Relative configuration
 - Both
 - None
- Identify the phenolic group containing amino acid from the following.
 - Leucine
 - Tyrosine
 - Tryptophan
 - Asparagine

- x) Which of the following heterocycles is most aromatic in nature
- | | |
|--------------|------------|
| a) Furan | b) Pyrrole |
| c) Thiophene | d) All |
- xi) Isobutyl group is used to protect which nucleic acid base:
- | | |
|-------------|------------|
| a) Thymine | b) Adenine |
| c) Cytosine | d) Guanine |
- xii) Catalytic hydrogenation of steroidal ketones when carried out under neutral conditions will give:
- | | |
|-----------------------|-------------------------------|
| a) Axial alcohol | b) Trans-diaxial diol |
| c) Equatorial alcohol | d) Trans-diequatorial alcohol |
- xiii) Reductive amination of pyruvic acid, using ammonia and NaBH₄, gives which of the following amino acid
- | | |
|------------|------------|
| a) Glycine | b) Valine |
| c) Alanine | d) Proline |
- xiv) Electrophilic substitution reaction in furan occurs at which position?
- | | |
|-----------------------------|-----------------------------|
| a) 1 st position | b) 2 nd position |
| c) 3 rd position | d) all of the above |
- xv) What is the name of starting material used for Paal-Knoor synthesis of Furan?
- | | |
|------------------------|------------------------|
| a) 1,4-diketo compound | b) 1,5-diketo compound |
| c) All of the above | d) none of the above |
- xvi) Isomers which are different in their spatial arrangement are
- | | |
|-------------------|-------------------|
| a) Optical isomer | b) Enantiomers |
| c) diastereomers | d) stereo isomers |
- xvii) Isomers which rotate plane polarized light are optically inactive
- | | |
|---------|----------|
| a) True | b) False |
|---------|----------|
- xviii) Meso compounds have plane of symmetry
- | | |
|---------|----------|
| a) True | b) False |
|---------|----------|
- ixix) Racemic mixtures are optically inactive
- | | |
|---------|----------|
| a) True | b) False |
|---------|----------|
- xx) Which of the following is non-aromatic in nature
- | | |
|-----------------------|---------------|
| a) 2,3-dihydropyrrole | b) piperidine |
| c) 3,4-dihydrofuran | d) All |

2. Long Answer Question Solve any two.

**2x10
=20**

- i) Write the synthesis, aromaticity, reactions and medicinal uses of Quinoline.

- ii) What is Racemic modification? Discuss in detail about resolution of racemic mixture
- iii) Write the synthesis, chemical reaction and medicinal uses of Pyrrole and Furan

3. Short answer questions solve any seven.

7x5

i) Outline the reactions of pyridine. Discuss the basicity of pyridine in detail.

=35

ii) Explain stereoselective and stereospecific reactions.

iii) Define the term stereoisomer. Explain the properties of optical and geometrical isomers giving examples.

iv) Write note on asymmetric synthesis

v) Discuss Oppenauer oxidation and Birch reduction in detail.

vi) Explain the mechanism and stereochemistry involved in Beckmann's Rearrangement reactions.

vii) Discuss about absolute configuration assignment for compounds containing more than one chiral carbon

viii) Discuss Fischer - Indole synthesis with their mechanism.

ix) Write a note on Enantiomerism and meso compounds.
