

DEPTH OF BIOLOGY

B. PHARMACY

4 SEM IMPORTANT QUESTIONS

ORGANIC CHEMISTRY

DEPTH OF BIOLOGY

Note: To emphasize on definition, types, mechanisms, examples, uses/applications

UNIT-I

10 Hours

Stereo isomerism

Optical isomerism –

Optical activity, enantiomerism, diastereoisomerism, meso compounds

Elements of symmetry, chiral and achiral molecules

DL system of nomenclature of optical isomers, sequence rules, RS system of nomenclature of optical isomers

Reactions of chiral molecules

Racemic modification and resolution of racemic mixture.

Asymmetric synthesis: partial and absolute

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10 MARKS

1. Explain the R.S system of nomenclature of optical isomers

5 MARKS

1. Explain the reaction of chiral molecules
2. Define optical activity
3. Explain enantiomerism and diastereoisomerism
4. Explain racemic modification and resolution of racemic mixture

2 MARKS

1. Explain mesocompound
2. Write down difference between chiral and achiral molecule

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2 MARKS

3. Explain asymmetric synthesis
4. What are stereoisomers?

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UNIT-II

10 Hours

Geometrical isomerism

Nomenclature of geometrical isomers (Cis Trans, EZ, Syn Anti systems)

Methods of determination of configuration of geometrical isomers.

Conformational isomerism in Ethane, n-Butane and Cyclohexane.

Stereo isomerism in biphenyl compounds (Atropisomerism) and conditions for optical activity.

Stereospecific and stereoselective reactions

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10 MARKS

1. Explain the nomenclature of geometrical isomers
2. Explain the conformational isomers of ethane and N butane

5 MARKS

1. Discuss the method of determination of configuration of geometrical isomers
2. What are conformational isomers explain about cyclohexane
3. Define atropisomerism & condition for optical activity
4. Explain stereo specific and stereo selective reaction

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2 MARKS

1. Define stereo specific reaction
2. Define stereo selective action
3. What is geometrical isomers

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UNIT-III

Heterocyclic compounds:

Nomenclature and classification

Synthesis, reactions and medicinal uses of following compounds/derivatives

Pyrrrole, Furan, and Thiophene

Relative aromaticity and reactivity of Pyrrrole, Furan and Thiophene

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10 MARKS

1. Explain heterocyclic compound its nomenclature and classification

5 MARKS

1. Write down synthesis reaction in medicinal use of pyrrole
2. Write down the synthesis reaction and medicinal use of furane and thiophene

2 MARKS

1. Reactivity order of pyrrole, furane and thiophene
2. Aromaticity order of pyrrole, furan and thiophene
3. Define heterocyclic compound

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UNIT-IV

8 Hours

Synthesis, reactions and medicinal uses of following compounds/derivatives

Pyrazole, Imidazole, Oxazole and Thiazole.

Pyridine, Quinoline, Isoquinoline, Acridine and Indole. Basicity of pyridine

Synthesis and medicinal uses of Pyrimidine, Purine, azepines and their derivatives

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5 MARKS

1. Write down synthesis reaction and medicinal use of following-
 - A. Quinoline & isoquinoline
 - B. Pyrimidine
 - C. Acridine
 - D. Pyridine+ basicity of pyridine

2 MARKS

1. Write down the structure of
 - A. Acridine
 - B. Oxazole
 - C. Indole
 - D. Thiazole

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UNIT-V

07 Hours

Reactions of synthetic importance

Metal hydride reduction (NaBH_4 and LiAlH_4), Clemmensen reduction, Birch reduction, Wolff Kishner reduction.

Oppenauer-oxidation and Dakin reaction.

Beckmanns rearrangement and Schmidt rearrangement.

Claisen-Schmidt condensation

10 MARKS

1. Oppenauer oxidation reaction
2. Beckmann rearrangement reaction
3. Schmidt rearrangement reaction
4. Wolf kishner reaction

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5 MARKS

1. Metal hydride reduction
2. Clemmenson reduction
3. Birch reduction
4. Claisen Schmidt condensation