Department of Pharmaceutical Sciences & Technology
Mesra, Ranchi

Sub: BP401T Pharmaceutical Organic Chemistry - III

Class: B. Pharm **Semester: IV**
Branch: Pharmacy **Session : SP-2022**

Time : 3 Hrs. **Full Marks : 75**

INSTRUCTIONS:

1. The missing data, if any, may be assumed suitably.
2. Before attempting the question paper, be sure that you have got the correct question paper.
3. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
4. This question paper consists of (03) three parts. Read the part wise instructions before attempting the questions.

Answer all questions

PART – I
Fill in the blanks: **(2x10=20)**

A. Enantiomerism was discovered in the year _____ by French Chemist _____.

B. Trans isomers have _____ atoms or groups on _____ sides of double bond.

C. Aniline react with _____, nitrobenzene and conc. H_2SO_4 to give Quinoline & known as _____ synthesis.

D. In Beckmann's rearrangement _____ are converted to _____ in presence of Phosphorus pentachloride.

E. Azepine are _____ membered Nitrogen containing _____ compounds.

F. Pyrrole, Furan has _____ delocalized _____ π electrons.

G. Purines are cyclic compounds containing a _____ ring fused with _____ ring.

H. Imidazole have _____ Nitrongen in a 5 membered ring system at _____ position.

I. _____ Pyrrole is also known as _____.

J. Oxirane is _____ membered ring containing _____ heteroatom.

PART – II Short Answers:

Answer 7 out of 9 Questions: (7x5=35)

1. What are stereoisomers. Define & explain the term Enantiomers, Racemers, Diastereomers. Distinguish between Enantiomers and Diastereomers with example.
2. What is sequence Rule. How it is applied to designated R&S configuration to compounds.
3. What are conformational isomers with an energy diagram describe the relative stabilities of conformation of n-Butane.
4. What are heterocyclic compounds. Describe the chemical & physical properties of –
   i. Pyrrole ii. Furan
   Write one synthesis of each class of compounds.
5. What are oxazoles. Write structure chemical property, synthesis (2) of this class compound. Mention two important uses of this compound.
6. Describe the medicinal importance of –
   i. Quinoline ii. Imidazole
   Write synthesis (2) and physical properties of the above class of compounds.
7. What are Pyrimidines. Write structure, chemical property, synthesis (2) of this class of compound. Mention two important medicinal uses.
8. Write short notes on –
   i. Clasein Schimdt condensation reaction
   ii. Beckmann's rearrangement reaction
9. Describe the reaction, importance & mechanism for –
   i. Wolf Kischners reduction reaction
   ii. Clemmenson reduction reaction

PART – III Long Answers:

Answer 2 out of 3 Questions : (2x10=20)

1. What are optical isomers. What are the minimum requirement for the compounds to show optical activity. Describe any three methods to separate racemers.
2. Write structure and chemical property of the following class of compounds –
   i. Thiophene ii. Azepine
   Describe synthesis & uses of any one class of compound.
3. What is the importance of –
   i. Reduction reaction
   ii. Oxidation reaction
   iii. Condensation reaction in organic synthesis procedure with specific example explain the use & mechanism of any two reactions.