Roll No…….. **Total No. of Printed Pages: [01]**
Total No. of Questions: [13]

B. Pharmacy (Semester – 4th)
PHARMACEUTICAL ORGANIC CHEMISTRY III
Subject Code: BP401T
Paper ID: [17170118]

Time: 03 Hours **Maximum Marks: 75**

Instruction for candidates:

1. Section A is compulsory. It consists of 10 parts of two marks each.
2. Section B consist of 9 questions of 5 marks each. The student has to attempt any 7 questions out of it.
3. Section C consist of 3 questions of 10 marks each. The student has to attempt any 2 questions.

Section – A **(2 marks each)**

Q1. Attempt the following:
a) What are sequence rules in stereochemistry?
b) Define asymmetric synthesis.
c) Draw conformational isomers of n-butane.
d) Give one chemical reaction of Pyrrole.
e) What are azepines.
f) Describe the significance of the nitrogen atom in the structure of Purine.
g) What role does $NaBH_4$ play in organic synthesis?
h) Sketch Dakin reaction.
i) What is Atropisomerism?
j) Give two medicinal uses of Imidazole derivatives.

Section – B **(5 marks each)**

Q2. Differentiate chiral and achiral molecules with examples.
Q3. Explain the concept of racemic modification.
Q4. Differentiate between cis-trans and E/Z nomenclature in geometrical isomerism.
Q5. Describe stereospecific and stereoselective reactions with examples.
Q6. What are the different methods used for resolution of racemic mixture.
Q7. Compare the relative aromaticity of Furan, and Thiophene.
Q8. Describe the basicity of Pyridine.
Q9. Write a short note on the medicinal uses of Quinoline.
Q10. Explain the Beckmann rearrangement.

Section – C **(10 marks each)**

Q11. Explain optical isomerism, covering enantiomerism, diastereoisomerism, meso compounds, and the RS nomenclature with examples.
Q12. Describe the synthesis, reactions, and medicinal uses of Pyrrole, and Thiophene, and compare their reactivity.
Q13. Discuss the mechanisms and applications of Clemmensen and Birch reductions and their relevance in pharmaceutical synthesis.