

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI  
(END SEMESTER EXAMINATION)

CLASS: M.PHARM  
BRANCH: PHARMACY

SEMESTER: II  
SESSION: SP2025

SUBJECT: MPC202T ADVANCED ORGANIC CHEMISTRY II

TIME: 3.00 Hours

FULL MARK: 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.
5. Answer any five questions.

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Q.1(a)	Define microwave reactions, instruments required with two examples of microwave reactions	[7] 1
Q.1(b)	Elaborate the theory of Ultrasound synthesis instrumentation with diagrams with two examples of ultrasound reactions	[8] 1
Q.2(a)	Report the process of flow chemistry with the construction materials used in instruments applied in flow chemistry	[7] 1
Q.2(b)	Describe: (i) Advantages and disadvantages of Microwave synthesis (ii) Microreactors, Meson reactors and the difference between them	[8] 1
Q.3(a)	How will you (i) apply combinatorial chemistry in drug discovery (ii) differentiate between various scaffolds in combinatorial chemistry (iii) Different types of solid supports.	[7] 3
Q.3(b)	Elaborate the following: (i) Sequential release (ii) Mix and split method with relevant diagrams	[8] 1
Q.4(a)	Analyze the following: (i) conrotatory and disrotatory motions with respect to electrocyclic reactions with examples (ii) Centre of symmetry and m symmetry	[7] 4
Q.4(b)	Detail out the following (i) Cycloaddition reactions (ii) Sigmatropic rearrangements Exhibit with diagrams	[8] 2
Q.5(a)	Differentiate enantiomers and diastereoisomers with suitable examples	[7]
Q.5(b)	Briefly discuss the methods available for resolution of racemic mixture	[8]
Q.6(a)	With suitable examples discuss the R/S and D/L naming system of optical isomers	[7]
Q.6(b)	With suitable examples discuss the cis/trans, E/Z and syn/anti naming system of geometrical isomers	[8]
Q.7(a)	With suitable example discuss: (i) Chiral auxiliaries (ii) Chiral pool synthesis	[7]
Q.7(b)	With suitable examples explain: (i) Stereoselective and (ii) Stereospecific reactions	[8]