

Name: Enrolment No:		 MANIPAL UNIVERSITY JAIPUR	
Odd Semester Mid Term Examination, September 2025 Faculty of Science, Technology, and Architecture School of Computer Science and Engineering Department of Computer Science and Engineering B.Tech – CSE			
Course Code: CSE3144		Course: Advanced Data Structure	
		Semester: V	
Time: 1.5 hrs.		Max. Marks: 30	
Instructions: All questions are compulsory. Missing data, if any, may be assumed suitably. Calculator is allowed.			
SECTION A			
S.No		Marks	CO
1-A	Explain the need of amortized analysis.	2	CO1
1-B	Demonstrate the requirement of external sorting.	2	CO2
1-C	Illustrate the concept of Segment tree.	2	CO5
SECTION B			
2-A	Given a list of elements 18, 11, 27, 9, 34, 6, 15, 21. Apply Tournament Trees to sort the elements.	4	CO2
2- B	Construct Standard Trie for BEAR, BELL,BILL, DO and DID. Illustrate the construction process step by step.	4	CO3
2-C	Given a list of elements 8, 11, 2, 7, 4, 6, 5 and 21. Build the AVL tree.	4	CO4
SECTION-C			
3-A	Construct a Splay tree by inserting values 14, 9, 17, 13, 8, 12, 22 and 27 in the same order. Explain steps of splaying after the insertion of each value.	6	CO4
3-B	Construct a B tree by of order 3 by inserting values 17, 12, 20, 16, 11, 15, 25 and 30 in the same order. Explain steps of insertion of each value.	6	CO5