

ANURAG Engineering College
(An Autonomous Institution)

II B.Tech I Semester Regular/Supplementary Examinations, December – 2024

DATA STRUCTURES
(COMMON TO CSE, IT & AIML)

Time: 3 Hours

Max. Marks: 60

Section – A (Short Answer type questions)	(10 Marks)		
Answer All Questions	Course Outcome	B.T Level	Marks
1. What is meant by an abstract data type (ADT)?	CO1	L1	1M
2. What operations are performed on Linear Lists?	CO1	L1	1M
3. Give linear representation of the dictionary?	CO2	L1	1M
4. List skip list operations?	CO2	L1	1M
5. Define Balanced search tree?	CO3	L1	1M
6. List any two properties of red black tree?	CO3	L1	1M
7. What is quick sort?	CO4	L1	1M
8. Write about External sorting?	CO4	L1	1M
9. Full forms of BM and KMP algorithm?	CO5	L1	1M
10. Write about LPS table in Knuth morris pratt algorithm?	CO5	L1	1M

Section B (Essay Questions)

Answer all questions, each question carries equal marks.

(5 X 10M = 50M)

11. A) Explain Single linked list? discuss their operations?	CO1	L2	10M
OR			
B) Convert the following expression $A+(B*C) - ((D * E + F) / G)$ into postfix.	CO1	L2	10M
12. A) Define hashing and discuss the different hashing functions with example?	CO2	L2	10M
OR			
B) What is dictionary? What are the basic operations of dictionary? and give its representation?	CO2	L3	10M
13. A) Explain the insertion, deletion operations on AVL trees?	CO3	L2	10M
OR			
B) Create binary search tree for following numbers (23,32,24, 36,15,12,39,2, 19)	CO3	L3	10M
14. A) What is a graph and their types? Explain various representations of a graph?	CO4	L3	10M
OR			
B) What is external sorting? Explain model for external sorting and 2-way merge sort and multiway merge in detail?	CO4	L3	10M
15. A) Explain standard tries and explain suffix tries in detail?	CO5	L2	10M
OR			
B) Explain Brute force algorithm in detail with example?	CO5	L2	10M