

QP Code: D133781		Total Pages: 1	Name:
			Register No.
THIRD SEMESTER UG DEGREE EXAMINATION, NOVEMBER 2025			
(CUFYUGP)			
BCA3CJ201 DATA STRUCTURES AND ALGORITHMS			
2024 Admission onwards			
Maximum Time :2 Hours		Maximum Marks :70	
Section A			
All Question can be answered. Each Question carries 3 marks (Ceiling: 24 Marks)			
1	Differentiate between data type and data structure.		
2	Define abstract data type (ADT) with an example.		
3	What is meant by overflow and underflow in stack?		
4	Write a short note on circular queue.		
5	Define sparse matrix.		
6	What is a doubly linked list?		
7	State any two applications of binary trees.		
8	Define hashing.		
9	What is meant by collision?		
10	Give an example of recursion.		
Section B			
All Question can be answered. Each Question carries 6 marks (Ceiling: 36 Marks)			
11	Prepare an algorithm to insert an element at a given position in an array.		
12	Explain the applications of stack in recursion with a suitable example.		
13	Describe different types of queues with examples.		
14	Explain adjacency list and adjacency matrix representations of graphs with example diagrams.		
15	Explain the properties of binary trees.		
16	Describe the operations on singly linked list with suitable algorithms.		
17	Write an algorithm for binary search and explain with an example.		
18	Explain different collision resolution techniques in hashing.		
Section C			
Answer any ONE. Each Question carries 10 marks (1x10=10 Marks)			
19	Discuss in detail the different types of linked lists with examples.		
20	Explain quick sort with an example.		