Reg. No. | | | | | | | | |

G. VENKATASWAMY NAIDU COLLEGE (AUTONOMOUS), KOVILPATTI – 628 502.

UG DEGREE END SEMESTER EXAMINATIONS - APRIL 2025.
(For those admitted in June 2024 and later)

PROGRAMME AND BRANCH: B.Sc., COMPUTER SCIENCE

SEM	CATEGORY	COMPONENT	COURSE CODE	COURSE TITLE
II	PART-III	CORE-2	U23CS202/U24CS202	DATA STRUCTURES & ALGORITHMS

Date & Session: 28.04.2025/FN **Time : 3 hours** **Maximum: 75 Marks**

Course Outcome	Bloom's K-level	Q. No.	**SECTION – A (10 X 1 = 10 Marks)** **Answer ALL Questions.**
CO1	K1	1.	What is a data structure? a) a programming language b) a way to store and organize data c) a collection algorithms d) a collection data types
CO1	K2	2.	Minimum number of fields in each node of a doubly linked list is. a) 1 b) 2 c) 3 d) 4
CO2	K1	3.	The data structure required to evaluate a postfix expression is. a) stack b) queue c) array d) linked list
CO2	K2	4.	A queue is a. a) FIFO (First In First Out) list b) LIFO (Last In First Out) list c) Ordered array d) Linear tree
CO3	K1	5.	Which of the following is non-linear data structure? a) stacks b) trees c) strings d) all the above
CO3	K2	6.	The number of edges from the root to the node is called ____ of the tree. a) height b) depth c) length d) child
CO4	K1	7.	A graph in which all vertices have equal degree is known as. a) complete graph b) regular graph c) multi graph d) simple graph
CO4	K2	8.	Which of the following properties does a simple graph not hold? a) must be connected b) must be unweight c) no loops d) no multiple edges
CO5	K1	9.	Sorting algorithm that works by repeatedly swapping the adjacent elements is. a) bubble sort b) selection sort c) radix sort d) insertion sort
CO5	K2	10.	Comparison-based sorting algorithm. a) selection sort b) radix sort c) bubble sort d) insertion sort
Course Outcome	**Bloom's K-level**	**Q. No.**	**SECTION – B (5 X 5 = 25 Marks)** **Answer ALL Questions choosing either (a) or (b)**
CO1	K3	11a.	Simply examine singly linked list. **(OR)**
CO1	K3	11b.	Examine linked list representation.

CO2	K3	12a.	Analyse the conversion of infix to postfix expression. **(OR)**
CO2	K3	12b.	Illustrate queue.
CO3	K4	13a.	Identify tree traversal technique. **(OR)**
CO3	K4	13b.	Compare B-Tree with B+ Tree.
CO4	K4	14a.	Identify how the representation of graph is carried. **(OR)**
CO4	K4	14b.	Categorize the applications of graph.
CO5	K5	15a.	Justify how selection sort takes place. **(OR)**
CO5	K5	15b.	Solve a problem using insertion sort.

Course Outcome	**Bloom's K-level**	**Q. No.**	**SECTION – C (5 X 8 = 40 Marks)** **Answer ALL Questions choosing either (a) or (b)**
CO1	K3	16a.	Construct the doubly linked lists structure. **(OR)**
CO1	K3	16b.	Interpret on circular linked list.
CO2	K4	17a.	Examine stack operations. **(OR)**
CO2	K4	17b.	Categorize the applications of queue.
CO3	K4	18a.	Analyze binary search tree. **(OR)**
CO3	K4	18b.	Investigate heap process.
CO4	K5	19a.	Recommend on graph representation. **(OR)**
CO4	K5	19b.	Evaluate depth first search.
CO5	K5	20a.	Show how bubble sort works. **(OR)**
CO5	K5	20b.	Discuss the hashing technique.