R20 Regulation *Subject code:3P3FC*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A+' Grade)

B.Tech III Semester Supplementary Examinations, December 2024

DATA STRUCTURES

(IT)

Maximum Marks: 70 Date:11.12.2024 Duration: 3 hours

Note: 1.This question paper contains two parts A and B.
2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit which carries 10M.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

	Part-A		
All the following questions carry equal marks (10X2M=20) Marks)		CO	Bloom Tx
1	What are advantages of C++?	1	L1
2	What is Operator overloading?	1	L1
3	Define Single and Double linked lists.	2	L1
4	Define queue ADT.	2	L1
5	What is level, height, degree, depth of a tree?	3	L1
6	What are the properties of heap?	3	L1
7	Give characteristics of good hashing function.	4	L1
8	State the main ideas of insertion sort.	4	L1
9	List different AVL tree rotations to insert a node.	5	L1
10	What are the properties of graph?	5	L1
	Part-B		
Answer All the following questions. (5X10M=50Marks)		CO	Bloom Tx
11	Explain about features of Object-oriented programming with examples. [10M]	1	L2
	OR		
12	Explain inheritance and types of inheritance with example. [10M]	1	L2
13	Explain the evaluation of postfix expression with an example. [10M]	2	L2
	OR		
14	Explain about Double linked lists and its operations with an example. [10M]	2	L2
15	Explain the following: [10M] a)Binary Tree b) Strictly Binary Tree c) Complete Binary Tree d) Threaded Binary Tree	3	L2
	OR		

16	A. Compare the differences between Linear and Non-Linear data structures. [5M] B. Explain array representation of tree with example. [5M]	3	L4 L2
17	What is Hash Table representation? What is Hash function? What are the types of Hash functions? [10M]	4	L2
	OR		
18	Explain the concept of insertion sort with an example. [10M]	4	L2
19	Explain about different Graph search methods. [10M]	5	L2
	OR		
20	Explain B-trees with an example. [10M]	5	L2